THE CULTIVATOR:

A CONSOLIDATION OF BUEL'S CULTIVATOR AND THE GENESEE FARMER.

"AGRICULTURE, AT ONCE THE CAUSE AND EVIDENCE OF CIVILIZATION."

CULT. VOL. VII—No. 5. ALBANY, N. Y. MAY, 1840. CULT. AND FAR. VOL. I—No. 5.

PUBLISHED MONTHLY,
BY JESSE BUEL & CO. PROPRIETORS,
Office No. 7 Exchange, Second Floor.

TERMS—ONE DOLLAR per annum—*Six copies* for $5—the money to be remitted in advance, free of postage. A commission of 20 per cent will be allowed to Agents who obtain 25 or more subscribers, and 25 per cent to those who obtain 100 or more. All subscriptions to commence with a volume.

THE CULTIVATOR.

WILLIS GAYLORD & LUTHER TUCKER, EDITORS.

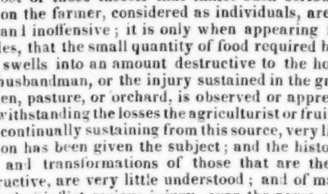
☞ For Notices to Correspondents, Acknowledgments, &c. see cover.

PREDATORY INSECTS.

Most of those insects that inflict such serious injuries on the farmer, considered as individuals, are harmless and inoffensive; it is only when appearing in multitudes, that the small quantity of food required by each one, swells into an amount destructive to the hopes of the husbandman, or the injury sustained in the granary, garden, pasture, or orchard, is observed or appreciated. Notwithstanding the losses the agriculturist or fruit grower is continually sustaining from this source, very little attention has been given the subject; and the history, habits, and transformations of those that are the most destructive, are very little understood; and of many of them that inflict serious injury, even the name and appearance is unknown, or involved in doubt and mystery. Certain classes of insects are known to prey upon the roots of plants; others on the leaves and fruits; others on the ripened seeds; some on the woody fibre, and some on the ascending juices; all more or less pernicious; but the means of destroying which, or preventing their ravages, can never be fully effected or known, until their habits and modes of existence shall be observed. Every farmer may aid much in this investigation; he may collect facts respecting the appearance and action of these depredators, from which he himself, or the man of science, may deduce the most important results.

To aid the farmer in this matter, to put him as it were on the correct course of observation, and to show how important a knowledge of the insects that prey upon his labors, and diminish his profits, is to him, is the object of this paper.

Fig. 40, WIRE WORM.



Larvæ. *Perfect Iasect.*

Cataphagus lineatus, of Stephens.
Eleater segetis, of Bierk.
Eleater lineatus of Linnæus.

"It measures when full grown about seven lines in length. The body is very narrow, of a yellow color, hard, shining, and composed of twelve segments, on the last of which are two indented, dark colored specks. The head is brown, the extremity of the jaws black. The anterior segments have six scaly feet. It is said to remain in the ground four or five years, from which it issues as an Eleater."—*Wilson.*

This is a most destructive insect to crops, frequently committing the greatest ravages, particularly on roots, and spring grains. Perhaps there is no insect so injurious to the Indian corn plant, as this; and it is the most numerous in the turf of old pastures or meadows. We once turned over a piece of old meadow, and planted with corn. This was entirely destroyed—three or four worms frequently attacking a single kernel of the seed, or a stalk of the plant. Not supposing the potato was liable to their attacks, we planted the ground over with this root, but even these were in many cases destroyed by them. The potatoes planted were first attacked by them, and on digging up a tuber, from five to ten were found sticking into it like pins. The sprouts were then assailed, but these were so numerous and vigorous, that in most cases they were soon beyond danger from the worm, as a fine crop of potatoes was the product of the ground. Barley, spring wheat, and oats are sadly thinned out by them where they abound. The perfect insect is a slim black bug, of the kind commonly known as the *snapping bug*; and after depositing its eggs in the earth, perishes within a short time. Late plowing, by exposing the torpid larvæ to the action of severe frosts, or ashes and lime applied to the earth or plants, appear to be the most effectual methods of counteracting and destroying the wire worm.

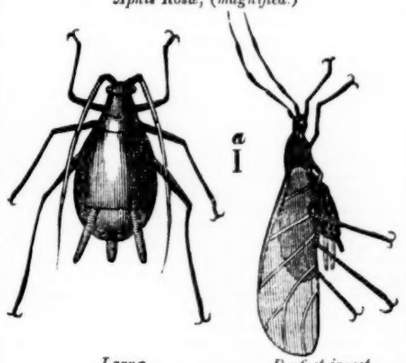
Fig. 41, WHITE GRUB.

Larvæ. *Female perfect insect.*
Melolontha vulgaris.
Scarabeus melolontha.

The perfect insect of this destructive worm is called the May-bug, cockchafer, &c.; and makes its appearance about the time of the blossoming of the fruit trees. It is slow and unwieldly in flight, remains secreted during the day, is attracted by light, and during the time of its appearance at dusk, seems to rise up in countless numbers from the earth, the grass, or its hiding places. The perfect insect exists but a short time, and is not considered as injurious. The male speedily perishes after the sexual union. The female, as soon as she is fecundated, digs a hole in the earth about six inches deep, deposites her eggs, and dies. The larvæ from these eggs are the white, red-headed grub of our meadows and corn fields, feeding on the roots of these plants, and often inflicting great ravages. We have seen acres of meadow, the roots of the grasses in which were so cut off by this grub, that the turf might be readily rolled up in pieces of almost any size. Both this worm and the wire worm confine their ravages beneath the surface, never showing themselves above the earth, until the last transformation is undergone, and the perfect insect produced. These grubs change their skin every year, and, according to Kirby and Spence, they remain in the ground four years.

The larvæ of the melolontha, is one of the very few which have been distinguished by the name of vegetating insects, from their being found both before and after death with shoots of some vegetable fungus issuing from them. In some districts of Pennsylvania, it is a common belief that these vegetable elongations change to blackberry bushes; a supposition, it is needless to say, utterly unfounded. Hogs not unfrequently commit serious injury in turf lands in hunting these larvæ. It has been recommended in districts where this grub abounds, that during the few evenings in which it appears, bright fires be kindled of straw or brushwood, which, by attracting the insects, will destroy thousands, and prevent the annual deposition of eggs. Late and deep plowing, will, as in the case of the cut worm, destroy such of the larvæ as are thrown out and exposed to the action of the frost.

Fig. 42, PLANT LOUSE—*Aphis.*
Aphis Rosæ, (magnified.)



Larvæ. *Perfect insect.*
a—Size of life.

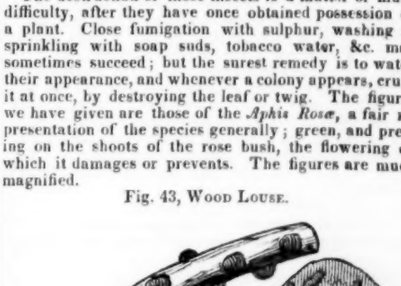
This predatory insect is in many respects a most singular one, and is well deserving the attention of the curious—certainly of the farmer, on whose labors it preys abundantly. The genus is a large one, and there are many species, infesting different plants and trees; indeed, almost each variety of tree or plant seems to have its peculiar colony or kind of aphis.

The true aphis are usually very small, their bodies of a soft consistence, the eyes entire, and the abdomen furnished with two horn-like projections at its posterior extremity. Their movements in walking are slow, they cannot leap, and during a large part of their lives, are without wings. They have no proper mouth, but are furnished with a sucker which they use in extracting the fluids of plants which constitutes their food. When the aphis first appears in the spring, they are usually solitary, and all females. These give birth to living young, and these, too, are females—the males not being produced until late in the season. Unlike any other known insect, the females thus produced continue to multiply their numbers without connexion with the male—the effect of the parental impregnation extending, according to Huber and Bonnet, to no less than eight generations. The effect of this singular mode of reproduction is a multiplication of such rapidity, that Reamur calculates a single mother in five generations may be the means of producing 5,904,900,000! Every farmer witnesses instances of this rapid increase. A single female fixes herself on the leaf of a turnep, cabbage, or the tender shoot of a tree. In a few days they can be numbered by thousands, each vigorously employed in pumping out the juices of the plant, and thus injuring, if not wholly destroying it. The leaves curl and wither, and if they fix on plants intended for seed, the seeds are not perfected.

Another striking peculiarity in the aphis, is the honey like product it furnishes in such abundance; and which, during the summer months, constitutes the principal food of the ant. The two horn-like protuberances just mentioned, are hollow; and while they are fixed to the leaf or twig, small drops of a transparent liquor exude from the opening, and if not taken off by the ant, are thrown off into the air. A few years since a magnum bonum plum tree, standing in our garden, was infested by millions of aphides, the under side of the leaves being encrusted with them. From this tree, there fell a continual shower of these minute drops, looking, when the sun was in the proper direction, like falling mist. The currant leaves, grass, &c. below, was frequented by flies and wasps, as the tree itself was by numerous ants—all partaking of this animal nectar.

The destruction of these insects is a matter of much difficulty, after they have once obtained possession of a plant. Close fumigation with sulphur, washing or sprinkling with soap suds, tobacco water, &c. may sometimes succeed; but the surest remedy is to watch their appearance, and whenever a colony appears, crush it at once, by destroying the leaf or twig. The figures we have given are those of the *Aphis Rosæ*, a fair representation of the species generally; green, and preying on the shoots of the rose bush, the flowering of which it damages or prevents. The figures are much magnified.

Fig. 43, WOOD LOUSE.



a, Coccus acer, found on the maple and bittersweet.
b, Coccus malus, apple tree louse
Coccus, of Linnæus.
Gallinsecta, of Reamur

This insect was classed by Linnæus among the aphides, and in some respects it resembles them; but it differs decidedly in its mode of reproduction, its products, and in its general appearance. Like the aphis, it lives by sucking the juices of plants, and is thus very injurious; but it confines itself to trees, while the aphis is omniverous. There are many species of the coccus, several of which are common in our orchards and woodlands; all, however, but little known except those that infest apple trees, which they sometimes destroy. Two of the most important coloring materials used, are the products of these insects, or rather the insects themselves; the first called Kermes, (*Coccus ilicus,*) and known from the earliest ages as imparting a crimson, or blood-red dye to cloth; and the other the *Coccus cacti*, or cochineal of South America. Of this insect, in some years, nearly 5,600,000 dollars have been exported to Europe and the United States. What is called in commerce, *Lac*, is the product of an East India coccus.

The insect that infests apple trees, is the female of the coccus malus, and appears like a small, hard, immoveable shell, as indeed it usually is when observed. This coccus, when impregnated, fixes itself by its sucker which projects from between its two forelegs, to the bark, and after depositing its eggs between its body and the bark, dies, and forms a covering that completely protects them through the winter, as well as the

young in the spring, until they are ready to provide for themselves, which they do while so small as to require a glass to make them visible. Nothing looks more disagreeable than a tree crusted over with this insect; and if they are suffered to proceed, unmolested, the tree will speedily be ruined. When this shell is lifted with the point of a knife, a fine dust or powder will be seen, which the microscope shows to be the eggs, or if in the early summer months, the young of the coccus.

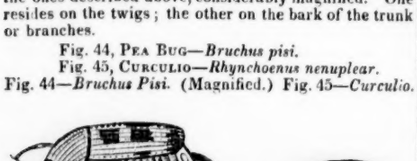
There is another species which we have seen on the bitter-sweet and the maple. It is nearly as large, when full grown, as the half of a small pea; and has its upper side in the oval form, while it is fastened by a sucker on the under or flattened side. The eggs of this kind are deposited in the same manner as the former; the dried body of the mother furnishing a hard covering, beneath which they remain until they are ready to emerge, to commence the work of procreation and destruction. In examining the flour-like dust under these shells, with a good microscope, we have frequently, at the same time and in the same mass, found the coccus in all its stages of development, from the egg to the lively insect.

The *Aphis lanata*, or cottony aphis, is a species of coccus, instead of a true aphis. This insect adopts the same mode of feeding; produces and protects its young in the same manner; but to facilitate their spread, the shell is filled with a substance resembling cotton, which, when the dead body of the mother is lifted to enable them to remove, puffs out in white balls or tags, and on this, blown about by the winds, the young coccus is wafted till it is lodged on some tree, where it forms new colonies, again to reproduce and spread. What English writers have called the American blight, appears to be an insect of this kind; and they are all very injurious to trees, and particularly so to the apple, which it seems to prefer. When the outer bark of a fruit tree, infested with the coccus, is pared off, numerous dead points will be found, indicating the place where the sucker had penetrated. If these points abound, it is clear the sap must be vitiated, independent of the quantity lost by its appropriation to their support.

To destroy the coccus, some application that will destroy the young before they fix themselves to the bark, and which will also prevent their escape from under the bodies where they are hatched, seems desirable. Washing the tree in lye will kill all the young that are not protected; but, in some experiments we made on an apple tree, it did not seem to affect those beneath the shell, or prevent the eggs from hatching. A composition, made of oil and tar, rubbed over the body, will do much towards destroying the insects; but its use is unpleasant, and too much, too, would injure the tree. White-washing appears, on every account, the best mode for cleaning infested fruit trees—it not only killing such insects, but bringing off the rough and unsightly bark, beneath which so many varieties of insect depredators take shelter. The figures are those of the ones described above, considerably magnified. One resides on the twigs; the other on the bark of the trunk or branches.

Fig. 44, Pea Bug—*Bruchus pisi.*
Fig. 45, Curculio—*Rhynchoenus nenuplear.*

Fig. 44—*Bruchus Pisi.* (Magnified.) Fig. 45—*Curculio.*



a—Size of life.

The first of these insects is well known to farmers and gardeners, from the ravages it makes in the pea crop, not unfrequently becoming such a nuisance, that farmers are mostly obliged for a time to suspend the cultivation of the pea for a year or two, when its numbers are at once reduced, and the crop may again be resorted to with success. The egg is deposited in the pea, where the worm is produced, until it becomes a perfect insect, or if disturbed, falls to the earth, in which it is supposed, in that case, to undergo its transformations. When peas infected, or containing the larvæ, are sown, the perfect insect is developed, and ready to attack the plant, at the time it is most exposed. If, on the contrary, peas are kept over the summer, the insect is developed, and perishes without propagation; so, that if two years old peas are used for seed, the crop will usually be free from the bug, unless infected crops are in the immediate vicinity, or have preceded it.

The curculio constitutes a numerous family of depredators, among which the *C. granaria*, the insect that commits such ravages in granaries, and the one we have named, known for its destruction of fruit, are the most prominent. In the *nenuplear*, the antennæ, it will be seen, are placed on the proboscis, and this mark ranks it among the Orchestes of Illiger.

The fruit curculio attacks nearly all smooth skinned fruits; but plums and cherries are its favorites, and in some years these are nearly or quite destroyed. It makes its appearance at the time of the formation of the young fruit, and in a few days, on examining the trees, it will be found, when the insect is plenty, that nearly every plum has a small crescent-like incision in it; and as the fruit increases in size, it will be found that in the most of these an egg has been deposited, which changes to a worm, preying upon the pulp of the fruit, and rendering it worthless. The fruit so impregnated, usually falls to the ground, or if not, the grub drops from it, and seeks a refuge in the earth, where it remains over the winter, and becomes a perfect insect in the spring, ready anew to assail the tree. The curculio is a shy insect, rarely showing itself even on trees the most injured, lying still in the day, and stinging busily in the night. By placing a sheet under the tree, however, and giving it a violent jar, they are dislodged in great numbers; and, as for a time they remain perfectly motionless, advantage may be taken of this inaction to destroy them. When the curculio once appears in an orchard, it usually increases until the fruit is annually destroyed by them, unless measures are timely taken to counteract them. To do this, several ways have been recommended, either of which, perhaps, would be effectual, if generally adopted and carefully pursued.

Dislodging them and destroying them, as mentioned above, is a good method, but the operation must commence in season, and be continued each evening until the period for their depredation is passed. If once permitted to make a lodgment in the tree, they will injure more or less fruit—as the quantity they will puncture in a night is surprising. Paving the ground with stones or beaten gravel, around the trees, has been successful in some cases; as when the grub falls, it cannot at once penetrate the earth, and is picked up by small birds who are very fond of them. Having the fruit orchard accessible to swine, is, perhaps, one of the most effectual methods of destroying them; these animals eating all the fruit that falls, and it is the worm-infested cherries or plums that first fall, and, of course, the insects are in these cases effectually used up. We have some cherry trees standing in an orchard where swine usually run, and the fruit on these trees, is uniformly fair and fine; while that on other trees, standing where swine never come, is frequently much of it damaged and worthless.

Some have attributed the black excresences which, within a few years, have destroyed so many valuable plum and cherry trees, to the insect named above, and which is so injurious to fruit. That this destruction of the wood is the work of an insect, cannot be doubted; but it does not seem to be satisfactorily proved, that the two depredators are identical. One thing seems certain, however; unless more efforts are made to prevent the spread of this evil, by the excision and burning of the infected branches whenever they appear, the cultivation of the plum and some kinds of cherry must be discontinued among us.

AGRICULTURAL SCHOOLS.

In another part of this sheet, we give an address to the farmers of the western district of this state, from our correspondent 'Evelyn,' and the arguments which he has there so ably urged, with reference to agricultural schools in that part of the state, are applicable in a greater or less degree to every section of our country. The necessity of providing some such institutions for the education of the sons of farmers, as is proposed by 'Evelyn,' has long been apparent to every reflecting mind; institutions that shall unite the teaching of all the useful branches of learning, with that of the arts and sciences, and a thorough *experimental* knowledge of agriculture: and the hope has been entertained, that while hundreds of thousands were lavished on institutions devoted to the professions alone, a few thousands might be given to aid in imparting instruction on the art of all arts, that of tilling the soil. This hope, however, has been constantly disappointed; and it seems now necessary to look to individual munificence, or associated enterprise, for the accomplishment of this purpose; and we believe it can be satisfactorily effected in this way alone.

The examples adduced of the private agricultural schools, or colleges if you please, of Fellenberg, Oberlin, or Pestalozzi, are direct to the purpose. With little or no encouragement from those in power, these men effected an incalculable amount of good; gathered around them young men from every quarter, instructed them in all valuable learning; and returned them to their friends qualified to teach others—or by their superior skill to raise, what by many was considered the drudgery of agriculture, to the rank of a science. In this country, we have as yet had no schools like these. The nearest approach to them was the Rensselaer school at Troy; but in this, agriculture was not the MAIN thing aimed at, and there were no means of being taught experimental farming, on a scale proportioned to its importance.

We can easily conceive what such a school as the Rensselaer one might become, if there was attached to it three or four hundred acres of land, and the application of agricultural chemistry and vegetable physiology, taught in the school room, carried out in the field; aided by the advantage of a few hours' daily labor in the field or shop. Suppose for a moment, that Judge Buel had opened a school on the Fellenberg system, for the instruction of farmers' sons, or others, in the principles of scientific and practical agriculture. Who can doubt that the most beneficial results would have ensued; and that many who now spend three or four years in a college, because they have little else to do with their time, and come out only to add to the number and dead weight of the unproductive classes, would have hastened to avail themselves of such an opportunity of acquiring useful knowledge and confirmed health—mental and physical energy of the most available kind; and who can doubt, that in such hands, such a school would be productive of profit, as well as usefulness and fame.

We hope the affluent among the lovers of our country will look at this subject. In what way could the Wadsworths, the Rensselaers, the Grangers, and the many other rich and influential men of our country, make a more commendable use of their vast resources, or establish a surer claim to the proud title of a benefactor of the human race, than in endowing schools like those under consideration. The instructors can be found; and thousands are anxiously waiting to avail themselves of the benefits such instructions would offer. Sound minds in healthy bodies, are what we most want in the young—and the schools of Fellenberg and Oberlin, show that no places can be more favorable in these respects than agricultural institutes.

AGRICULTURE IN MASSACHUSETTS.

The memorial of the Commissioner for the Agricultural Survey of Massachusetts, to the legislature of that state, is before us, abounding, as do all the papers from the pen of that gentleman, with valuable facts and suggestions; an abstract of which we propose to lay before our readers.

The part which the state of Massachusetts has taken in regard to the promotion of her agricultural interests, has been most honorable to her, and advantageous to her citizens. In developing her resources by agricultural and geological surveys; in encouraging the culture of wheat, sugar, and silk, by suitable but temporary bounties; and in the small though encouraging aid she has given her agricultural societies, the Bay State has set an example which may well be followed by others, where the circumstances require such interposition. The question has naturally arisen, whether the permanent prosperity of the state may not be more promoted by a different disposition, in some respects, of the bounties of the state; and it is to the statement of facts bearing on this point, that Mr. Colman's memorial is principally directed.

The commissioner states, in the first place, that the disbursements in the two last years to agricultural societies, has been $8,768; bounties on silk in the same time, $785.14; bounty on wheat the last year $9,280.14; making a total of $18,833.28. He does not state the expenditures for the last year on account of the geological and agricultural surveys, but calling that item $3,000, it will be seen that Massachusetts has expended within two years about twenty-three or twenty-four thousand dollars. Mr. Colman is of the opinion that a large part of this patronage may now be withheld, and the remainder applied with more advantage than it has been.

Mr. Colman advises that no further bounty be given for the production of wheat. The objects of the bounty were two; first, to determine the capacity of the state for its production; and secondly, to ascertain by actual experiment, the best modes to be adopted to secure its cultivation. The first has been fully and satisfactorily ascertained, and a continuance of the bounty would not be likely to secure the latter object.

The main objects in view, in offering the bounty on silk, have also been accomplished; and that part of the expenditure is no longer necessary. The fact that silk may be abundantly and profitably produced; that it can be made an important item of domestic and household industry; and that no fears need be entertained from the climate, have been established; though as much light on the points of the best kinds of mulberrry trees, and the best modes of managing the worms, has not been obtained as was expected, or as is desirable.

No claim has been made on the state, for the proposed bounty on beet sugar, though several specimens have been presented of good quality; and the practicability of the beet culture, and the sugar manufacture being thus established, Mr. Colman recommends, if the terms of the law will admit, that the offered bounty be withdrawn.

In order to give greater efficiency to the efforts to promote agriculture in the state, the commissioner proposes the organization of a "Board of Domestic Industry, composed of one delegate from each county, or congressional district, to be joined by the committees of the legislature on agriculture and manufactures, and the Governor and Lieut. Governor of the commonwealth, *ex officio*." This Board, the members of which are to have a reasonable compensation, are to meet once a year at Boston; and their session is never to extend over ten days. This board is to have the general superintendence of the aid given by the state for the promotion of agriculture, and its kindred objects. The agricultural societies are to make full reports to the Board, and the Board is to annually report to the legislature the condition of the state on these points. The agricultural societies are to receive one-half of the sum now paid them, and the other half placed at the disposal of the Board, to be distributed in premiums open to competition throughout the state; and on such objects as shall be deemed most conducive to the public good. The great object to be kept in view, in offering and distributing these premiums, to be "not the rewarding of individual enterprise and skill, but the obtaining of practical and decisive information for the general benefit of the farmers."

Such is the general outline of the plan proposed by Mr. Colman, and we think, if carried out by the legislative body, the state will receive a more decided bene-

fit, and at less expense than under the present system. We are glad to perceive Mr. Colman urging upon the legislature of Massachusetts, the importance of being at regular intervals in possession of completc details of the condition and state of our agricultural and domestic industry. There is scarcely an object of more importance, as enabling us to understand the resources of our country, and the most efficient mode of directing them; and through the agency of the assessors, the information sought might be readily obtained.

Mr. Colman states the amount of flour imported into Boston, annually, for the last three years, to average 418,000 barrels; and 2,000,000 bushels of other bread stuffs; and he estimates the expenditures for bread, by two-thirds of the state, at $9,000,000. If this amount, by an improved system of agriculture, could be reduced one-half, and we believe it might be done, the state would be greatly the gainer, and no one the loser. At present it is doubtful whether Massachusetts raises a peck of corn to each acre of her territory; that she could raise a bushel to each acre, will scarcely be disputed; and this difference would alone do much towards supplying her industrious and enterprising population with bread.

Tropical or Southern Florida.

We have before us a series of papers from Dr. Perrine, of Indian Key, on the South Florida coast; a communication from whom appeared in the February number of the Cultivator. Dr. Perrine is, as is generally known, the talented and indefatigable agent of the Florida Tropical Plant Company—the object of which was the introduction, into that Peninsula, of such trees, plants, &c. as experience had proved particularly valuable in tropical climates, and adapted in their habits to that section of our country. His operations commenced by the establishment of a colony at the extreme southern part of Florida; but it had hardly gone into operation, and but just begun to exhibit its efficiency in the collection of plants, &c. when the colonists were massacred or driven off by the Indians, and the trees and plants destroyed or left to themselves. Since that time Dr Perrine has established himself on Indian Key, one of the islet reefs that surround the cape of Florida, and, with the aid of several gentleman, has converted this coral or limestone rock, which was nearly bare of earth when they took possession, into one of the most delightful places in this country. Containing about twelve acres, it has been converted into a garden, where may be found a great variety of trees and plants from all parts of tropical America; several kinds of sugar canes, cocoa nut, bread fruit, orange and lemon trees; the plants that produce the Sisal flax and Manilla hemp; palms of several kinds; among others the sugar palm from the East Indies; with numerous other productions of great value and interest.

As Dr. Perrine's papers are not of the kind that would interest the majority of our readers, except in the abstract, the crowded state of our columns compels up to adopt this method of disposing of them; and in this way comply with the Doctor's wish, which was to call the attention of the public to the facts contained in them. In a former communication to us, Dr. P. expresses his firm conviction, that had the government of the United States offered a reward of $500, for every Indian brought into the posts of the peninsula, the war would have been closed in six months; either by the capture of the Indians, by volunteers attracted by such a compensation, or by the Indians surrendering themselves for the sake of the bounty—a result not at all improbable. Either way, the expense would be comparatively nothing to what it is annually costing this country; but we apprehend a speedy termination of the war in any way, would sadly interfere with the prospects of the harpy host of contractors and speculators, assembled in and around Florida, and whose efforts have, doubtless, contributed to prolong the struggle in that peninsula.

The papers in the package before us are—

1. A memorial to the Senator from South Florida to the Floridian legislature, stating the causes that have prevented the agricultural improvement of that district of country, and the best means of removing them.

2. A letter to R. Fitzpatrick, Esq. representative of Dade county in the legislature of Florida. It is similar, in its contents and arguments, to the one published in the Cultivator, of February, demonstrating the salubrity of the climate, and the excellence of the soil, and the facilities offered for the production of fruits, silks, &c.

3 A memorial to the Hon. James Whitcomb, Commissioner of the land office at Washington. This was accompanied by samples of the productions of the imported plants, as well as the native ones, embracing the Manilla hemp, the Agave Sisalana, the Coontee seeds, silk from several kinds of mulberries, seventeen kinds of valuable woods, embracing teak, mastic, mahogony, lignum vitæ, &c. &c.

4. A communication to the Hon. H. L. Ellsworth, of the patent office, Washington. A variety of articles accompanied this, for the use of the agricultural department of the patent office; among which were a cluster of cocoa nuts, grown on Indian Key, in addition to most of those before mentioned.

5. A memorial, similar in nature to No. 1, but addressed to the legislative council of Florida.

6. A communication to the editors of the Cultivator, on the health, fertility, and value, in a national point of view, of Florida; and detailing, at length, the causes that have produced and perpetuated so unfavorable an opinion in the public mind, respecting this region. The wrecking system; the defective existing commercial regulations; and the Seminole war, are the principal of these causes. The ill health of the people on the coasts,has been unquestionably greatly exaggerated; and may be, in a great measure, attributed to the irregular, dissolute life of many of the individuals. Of the agricultural capabilities of a large portion of Florida, but one opinion can be entertained. Its geological formation renders it certain that it contains the essential elements of fertility; and the experiments that have been made, justify this conclusion. It is, beside, the only spot in the United States, where tropical plants can flourish; and Dr. Perrine deserves great praise for his persevering efforts, in defiance of so many obstacles, to promote the interests, and make known the importance, of this extreme southern part of our great country.

Tables of Temperature, &c. for 1838 and 1839.

We have prepared for the Cultivator, the following tables of the temperature, weather, course of the winds, &c. as in some respects they may serve for comparison with tables by other observers. The place of observation is about 15 miles, a little west of south, from Syracuse, in Onondaga county, and at an elevation of at least 800 feet above the great Seneca level, or the Erie canal.

Year & month.	Ave. temp 9 A.M.	Ave. temp 2 P.M.	Weather. Clear.	Cloudy.	Rain.	Snow.	Winds. North.	N. West.	West.	S. West.	South.	S. East.	East.	N. East.	Range of therm.
1838. Jan.	26	32	13	14	4	11	1	2	5	13	5	9	..	..	1 63
Feb.	9	14	7	21	..	15	1	9	7	6	2	..	..	2	34
Mar.	31	40	20	11	4	5	2	3	12	5	3	1	1	3	57
April	29	39	11	19	5	11	2	10	10	2	3	2	1	..	43
May,	48	57	12	19	12	4	1	8	11	5	..	3	..	3	62
June,	65	77	18	12	10	..	2	5	17	2	1	..	..	3	42
July,	72	81	20	11	11	..	2	4	17	5	3	..	..	1	34
Aug.	64	74	21	10	10	..	..	9	15	4	2	..	..	..	24
Sept.	58	66	22	9	4	..	3	8	16	3	..	..	..	..	30
Oct.	43	47	8	23	10	4	1	4	12	8	3	..	..	2	47
Nov.	28	33	7	23	6	9	2	6	9	10	2	..	..	1	55
Dec.	19	22	3	28	1	19	1	4	15	10	1	..	..	..	34
	41	48	162	200	77	78	18	72	154	66	29	6	2	16	
1839. Jan.	20	25	10	21	3	10	2	5	8	7	6	..	3	..	59
Feb.	24	32	9	19	5	6	..	2	6	6	6	4	3	..	51
Mar.	29	35	17	14	6	6	2	4	9	8	4	1	3	..	61
April	46	54	20	10	9	1	5	4	7	1	5	4	2	1	43
May,	52	61	18	13	10	2	2	7	9	6	2	1	2	1	53
June,	59	71	15	15	14	..	..	12	9	4	2	1	1	1	39
July,	67	76	20	10	12	..	1	7	14	6	1	..	..	1	36
Aug.	64	73	21	10	9	..	..	5	8	6	3	4	3	1	41
Sept.	53	64	17	12	8	4	1	6	10	8	2	1	1	1	48
Oct.	50	61	22	9	5	..	2	4	6	12	2	2	1	1	57
Nov.	31	34	7	23	7	11	1	7	8	6	5	..	..	3	40
Dec.	25	30	8	23	1	15	3	3	11	2	4	2	5	..	38
	42	51	184	184	89	55	19	66	135	62	42	26	23	10	

The above tables show the average temperature for each month, and for the year; the number of clear and cloudy days in each month and year; the general course of the winds; and range of the thermometer for each month. The extreme range of the thermometer in 1838, was between 8°—on the last day of January, and 93° on the ninth day of July, giving 101°. The same for the year 1839, was 9°—January 23d, and 90° on the thirtieth day of July, giving 99°. An instance of those sudden changes which occur in our climate, took place on the 19th of October, 1839, when the wind, which during the forepart of the day, had been southwest, at half past 2 o'clock suddenly changed to north, and then the thermometer fell from 65° to 24° in three and a half hours, or 41 degrees. August of 1839, was remarkable for the severe gale on the Atlantic coast of the 28th and 29th, which was felt over a large extent of country. The gale was accompanied with a slight fall of snow in many places; as at Salem, Mass. Catskill, N. Y., and the elevated lands of New Hampshire. In western New-York both these days were fair, though the thermometer was low, and frosts occurred in various places.

Many observers, and among others, Darby, have noticed the fact that the trees which form the forests on the eastern shores of our great lakes, have a sensible inclination to the east; and that every where, where the hemlock is found, the long, slender twig that points the tree, has the same uniform deviation from the perpendicular, and always in the same direction, a little north of east. Where lands have been cleared, and orchards set out, it will be found, on examination that, where the exposure is free, nine-tenths of the trees have the same inclination. This is particularly the case west of the Allegany ranges, in the vast tract of country embraced by the Mississippi and St. Lawrence valleys. A glance at that part of the table, showing the course of the winds, will explain these phenomena; for, although two years may be too short a period to determine such a point with absolute certainty, yet there is little probability that further observations will make any essential variations in the main results.

We have for several years noticed the fact, and particularly during the summer months, when the meteorology of the heavens can be best observed, that whatever may be the direction or course of the lower strata of clouds, that of the cirri, or highest of all clouds, is almost invariably from west to east. It is nothing uncommon to see the lower clouds drifting in heavy masses, and with a strong wind, to the north or northeast; while far above them, the streamers of the cirri are floating undisturbed towards the east or southeast. Indeed, it is very rarely that cirri are observed taking any other course, and it may fairly be inferred that they never do so, until by greater condensation, they approach the nature of the cumulus, and by their density sink into the influence and action of the lower currents of air. From their observations on these clouds, on the high Cordilleras of South America and Mexico, Humboldt and Boussingault have inferred, and, we think, with good reason, that in the upper regions of the earth's atmosphere, there is a current constantly flowing from west to east; an inference which, if admitted, assists materially in developing the theory of storms, sudden changes of temperature, &c. &.

Neither of the two years, 1838 or 1839, have equaled in intensity of heat or cold, many that have preceded them. In the last respect, the present winter has far exceeded either of the others; the thermometer having, on the first of January, fallen to 13°—and having been below 0 a much greater number of times than in either of those years. The quantity of snow has, also, thus far, been unusually great; and its fall has been accompanied by storms of the greatest violence. What the effect of such a body of snow on the crops will be, remains to be seen.

HONEY LOCUST FOR HEDGES.

Dr. Daniel Stebbins of Northampton, has received from the State Agricultural Society of Massachusetts, the premium of 25 dollars, offered for the best specimen of live fence not less than 50 rods in length. The Dr. states that he "transplanted from his nursery four thousand two hundred honey locust trees, from the seed, being two years old, and set them around the borders of a twelve acre lot, about 160 rods, averaging about half a foot apart: some portions of the lot adjoining heavy timber land, is partially shaded and the trees have grown but indifferently; other parts having a better exposure, have grown very well, from five to eight feet, and capable of being so interlocked as to make a durable and valuable fence."

Could the honey locust be made to grow in hedges, there can be no doubt it would prove a great accession to our farming community, in which materials for good fences are unfortunately in many places very rare. Some few instances have occurred in which live fences, both of native and foreign plants seemed to promise well for a time; but owing either to some want of adaptation to our climate, or defect in the mode of culture, they have rarely continued to flourish for any length of time. Experiments with the native plants of this country should be instituted or continued, as they will be more likely to succeed than others; and should one of our native shrubs or trees prove to us what the hawthorn is to the agriculturists of England, it would be indeed invaluable. We have had trees of the honey or three thorned locust growing for some ten or fifteen years from the seed; and the appearance of their thorny stems is truly formidable. The man, or the beast, however, who ventures near them, requires to be shod with iron, as the bunches of stems from the trunks, or the thorns from the branches, occasionally fall to the ground and render approach with unprotected feet dangerous.

BROWN CORN.

The region around the beautiful Winipisiogee lake in New-Hampshire; is becoming as famous for corn, as is the picturesque lake county of the west for its wheat. The corn the most esteemed there is a variety somewhat resembling the Golden Sioux, eight rowed, large eared, the cob small and the kernel large, *and very early;* one of the most important considerations in our northern climate. It is named the Brown corn from the individual who first cultivated and brought it into notice; and its success in his hands, and those of other farmers in that region, and wherever it has been introduced, would seem to justify the high reputation it has acquired. At the Stafford County Agricultural Show and Fair, three fields of this corn were offered for the premium, one of which gave an acre producing 131 bushels; one, an acre producing 130 bushels; and one, an acre producing 116 bushels. The competitors were Messrs. Lanprey, Pillsbury, and Brown, all three living on the margin of the lake, or on the islands in its waters. The second crop, or 130 bushels per acre, was grown on a farm owned by E. H. Derby, Esq. of Boston, and of the proceeds and management of which an interesting account has been given by him in the 35th No. of the current volume of the New-England Farmer.

It is pleasant to record these triumphs of skill and industry; for they furnish the most conclusive testimony that the science and practice of agriculture is improving in the country, and that by attention to varieties of plants, and their culture, the product may be vastly increased, with little or no increase of labor. There can be little doubt that crops of from 70 to 80 bushels of corn to the acre are now as frequently grown as 40 or 50 were half a century since; and probably 100 bushels to the acre are oftener reached now than 70 was at that time. Indian corn is certainly one of the import-

ant crops grown in the United States, and should receive a proportional care and attention. All years may not prove equally favorable; but if proper care is paid to the preparation of the ground, and to the choice of seed, perhaps there is no crop less liable to a failure.

Answers to Inquiries, &c.

Culture of Onions.

To "W." who has inquired the "best method of cultivating onions, the preparation of the soil, time and manner of planting, quantity of seed, after culture, and the preferable mode of keeping them through the winter," we would say, that a fine loamy soil, sand predominating, not too deep or too rich, is the best for the onion. The onion is one of the few plants which appears to thrive best when cultivated for a succession of years on the same ground. The soil must be fine, that the seed may be covered without deep planting. If manure is used, it must be thoroughly rotted and incorporated with the surface soil. A writer in the Horticultural Register states that he raised excellent onions on a stiff clay, by covering the surface with three inches of well rotted manure, sowing the seed on this, and covering with an inch of fine earth. The roots could not penetrate the clay, and the bulbs formed in the surface mold. Onions should be sowed as early as the ground can be fitted for their reception; the latter part of April is to be preferred, though good crops are occasionally grown from May sowing. They should be sown in drills ten or twelve inches apart, and sufficient seed should be used to insure a proper thickness in the drills. To grow good onions, the roots may nearly touch each other, and the thinning may be regulated accordingly. The surface of the onion beds must be kept loose, and free from weeds. Few roots are more easily kept than the onion. It is only necessary to keep them dry, secure from frost, but at a temperature so low as not to encourage sprouting. Perfect dryness is one of the most essential things. In a dry cellar we have never found any difficulty in their preservation.

Shrunk Wheat for Seed.

"*Quere.*—Is it expedient to sow wheat that is shrunk from one-third to one-half, by rust? I have a quantity of the Italian wheat of this description which is in demand, but I have misgivings about it; I have ascertained by experiment that four kernels out of five will grow; but the quere is, whether such seed will produce a healthy stalk. An answer through your columns might be of service to the public.—*H. B. S. Vt.*"

It is *not* expedient or advisable in this case, or any other, to sow defective seed. Imperfect seeds, if they do vegetate, never produce as healthy, vigorous plants as those from sound perfect seeds. We have sometimes known very good wheat produced from shrunk seed, and if transferred to other soils, or districts, the wheat of our correspondent *may* give a good sound crop. The safe rule for the farmer is, never to use a seed, a plant, or an animal, for the purpose of reproduction, that is not perfect and healthy.

Cutting Red-Oak Posts.

Our friend in East Clarendon, Vt. who wishes to "know the best season for cutting red-oak for fence posts," is informed that we have had no experience with that kind of timber. If any of our readers will respond to the query, we shall be pleased to give the reply a place in our columns. The best time for cutting wood intended for timber, seems still a disputed point. That much of its durability, and its exemption from dry rot, is depending on the time in which it is cut, appears evident, and any facts that go to settle this point, will be acceptable to the public.

Warbles in Cattle.

William Todd, Utica Mills, Md. says—"I would be very thankful to know whether there is any cure for what we call 'Warbles' in the back of cattle at this time of year. I think them a great injury to cattle, and I have searched all the papers and books on the subject of stock, and can find nothing on the subject. I have some cattle at this time whose backs are literally covered with them. I heard that unleached ashes, scattered on their backs, and sprinkled with water, would cure them; but I have tried it in vain. There is a kind of maggot in each one, which will make its way out early in the summer. I have never known cattle to suffer from them farther than they are generally poor, and will not thrive or fatten well."

The difficulty or disease spoken of by our correspondent, is caused by the *Œstrus bovis*, or gad-fly, which in the hide and along the back of cattle, finds a habitation for its future young. The egg is deposited in July or August; the larvæ or grub is developed in the course of a few months, and remains in the abscess or pocket it has formed in the thickened hide until the spring months, when it escapes from its residence, burrows in the earth for a short time, undergoes its transformation, and emerges a perfect insect, prepared to reproduce and perpetuate its race. The head of the larvæ is always towards the bottom of the cyst, the respiratory organs being near the tail, and consequently near the opening in the skin. In speaking of this insect, Mr. Youatt, in his great work on cattle, says, "It certainly does not interfere with his condition, and the butcher regards the existence of warbles even as a proof of a disposition to thrive. The injury done to the skin is, however, another affair, and the tanner would probably tell a different story;" thus arriving at a different conclusion with regard to the injury they inflict, from that of our correspondent.

As soon as the larvæ is sufficiently developed to have its place of residence easily found, it is easily destroyed by pouring a little corrosive liquor into the hole, or by introducing a red-hot needle. The larvæ may also be crushed in its receptacle, or forced out with the finger and thumb, and destroyed.

The following is the method of cure recommended by Mr. Lawrence in his Farmers' and Graziers' Complete Guide:

Yellow basillican ointment	4 ounces,
Spirits of turpentine	1 ounce,
Oil of vitriol	½ a drachm.

First mix the ointment and turpentine together, and afterwards add by a little at a time the oil of vitriol; keeping it constantly stirred until well incorporated. It is then fit for use.

There are few animals of the ox or deer kind that are not liable to the attack of the fly; and we have seen warbles of the largest kind, in the common black squirrel of the woods.

Grasses for Lawns.

"T. F. S." of Pawtucket, asks, "What kind of grass or grasses make the most handsome green lawn? when should the seeds be sown? and where can the Jerusalem artichoke and the burr oak be obtained?"

What are called the *dwarf grasses*, or those used almost exclusively for pastures, and which form a fine close turf, are to be preferred for lawns. Among these Anthoxanthum odorata; Holcus odorata; Avenus pubescens; Poa annua; and some species of the agrostis, are used in England, and as they are found in our older pastures, would unquestionably succeed here. Grass seeds may be sown in the spring or fall, but the spring is the best time, and they may be put in with spring grain, such as wheat or barley, or by themselves, at the pleasure of the sower. All lawns require to be made perfectly smooth, and almost any of our common grasses that form a close turf, will, when frequently mown or fed close, give the fine and green appearance so desirable in turf. Much of the beauty of lawns will be found to depend on the treatment, and the labor bestowed on them.

The Jerusalem artichoke is to be found every where, being cultivated in the garden of almost every farmer, and the roots in small quantities can be doubtless procured of every gardener. The burr oak is not grown this side of the Alleganies to any extent. In the western states north of the Ohio, and particularly in Michigan, it flourishes abundantly, and by planting the acorns, might be readily introduced among us.

Potatoes from the Seed.

Our correspondent, J. G. Pierce, from East Smithfield, Pa. who inquires respecting the mode of producing potatoes from the seed, is informed that nothing more is necessary, than to provide a bed of rich garden mold in which the seeds are to be sown in the same manner as other small seeds, in drills 16 or 18 inches apart, covered with fine light earth, and kept from weeds while growing. The roots the first season will be small, probably showing many varieties, and the most promising of these must be preserved for planting the second year, when the peculiar quality and value of the several kinds can be more accurately ascertained. The celebrated Mr. Knight of England, in this way produced some of the most productive and valuable varieties now grown in that country.

Appletrees—Black Scours, &c.

A correspondent (J. L.) at St. Armands, L. C. wishes to know whether grafted appletrees, suitable for planting, can be had in Albany? whether they can be so packed as to be sent safely? and whether they will stand the winters of Canada?

Appletrees, in any quantity, of the best grafted varieties of fruit, can be had at the Albany nurseries, at prices varying from $15 to $20 per hundred trees. They can also be safely packed, and forwarded to any part of the Canadas, or the United States, by water. Whether they will survive the winters of that section of Canada, we have no means of determining with certainty; but it is our impression the trees would succeed, though, in such a northern latitude, the fruits might occasionally suffer from early or late frosts. This question might, however, be easily answered by any one on the spot.

J. L. also asks—"Do you know the disease which I will call the 'black scours,' or a preventive or cure for the same. It confines itself mostly to lambs or young sheep. It appears to be useless to do any thing for them, after they are attacked, as they soon run down and die."

We have never been troubled with this disease in our flocks; but Blacklock, in his excellent treatise, thus notices it. After making a distinction between the common diarrhœa, produced in lambs by fresh grass, and the dysentery, he proceeds—"If dysentery continues, it will terminate fatally within a fortnight. Death is generally preceded by the '*black scours*,' which is only an aggravation of the disease, or purging, the stools being mixed with shreds of dark, gangrenous matter from the decomposed interior of the intestines." The directions he gives, for cure, are as follows—Bleed freely, if the disease is recent, but moderately if a longer time has elapsed. After bleeding, immerse the sheep in a tub of hot water, for twenty minutes. Then give an ounce of castor oil, with thirty drops of laudanum, and cover the sheep in a snug corner. Thin, well boiled flour porridge, given in small quantities, after the operation of the oil, are useful to defend the bowels, soothe the pain, and stop the purging. Should this course fail, a medicine, prepared as follows, may be given—Logwood four ounces; extract of catechu, one drachm; cinnamon, two drachms; water, three pints; boil for a quarter of an hour; strain and add sixty drops of laudanum. Give half a pint night and morning, adding to each dose a grain of ipecacuanha. The best preventive is clean, dry pasture, pure air, and gentle treatment. Crowding numbers of sheep into confined places, is very sure to generate disease of some kind.

Lawrence, in his work on cattle and sheep, gives the following recipe for this disease in sheep:

"Peruvian bark, in powder,		one drachm.
Root of ginger,	do	one drachm.
Prepared chalk,	do	one drachm.
Brandy or gin,		one table spoonful

Mix and give in a little warm gruel; if the disease is very bad, add a tea-spoonful of laudanum."

Cultivation of Fruit Trees.

A correspondent at Elizabethtown, N. J., inquires as to the "proper time of setting out, and the best method of cultivating the pear, apple, quince, cherry, raspberry, gooseberry, and other slips."

Fruit trees may be transplanted at any season of the year, when proper precautions are used; but when an individual has the choice of time, the spring is much the best time for this operation. The ground for a nursery or an orchard should be in good condition; the holes should not be dug deep, but large; as many of the roots, (particularly the fibrous ones) should remain as is possible; in removal, they should never become dry or be frozen; and when placed in the earth, rich loose earth should be placed about and among the roots. Trees sometimes require to be secured from being shaken or moved by the wind, when first planted; but if the roots are preserved and the planting done in a skilful manner, staking may usually be dispensed with. Fruit trees after once being rooted, require little attention, other than pruning, and preventing the grasses from binding the roots of the tree.

Raspberries, gooseberries and currants, are usually planted in hedgerows, and to produce the largest and best fruit require that the earth around them should be moved annually. By cutting out from the currant slips, all the buds below, and for several inches above the surface of the earth, the numerous shoots that disfigure this shrub may be prevented, and the fruit greatly improved, by a more full and equal exposure to the sun.

Green's Straw Cutter.

We have received a letter from a gentleman of Rockingham county, Va. on the subject of this implement. Mr. H. purchased at Philadelphia, one of Green's Straw Cutters, and he concludes it is not the thing it has been recommended to be, and wishes that some one could be invented, and then thoroughly tested by some Agricultural Society, which would answer the purpose of cutting straw of any length, be strong, and not liable to get out of repair, and which could be worked by horse or other power as well as by hand.

We do not wonder that our correspondent complains. The cylinder of his machine was wood instead of lead as it should have been, and soon wore out; and the several parts were made of white pine, instead of good strong wood, as such implements require. We are not surprised that he ranks it with wooden nutmegs, and pine made carryall wagons.

Green's Straw Cutter, when well made, is as little liable to get out of order as any such implement perhaps can be; and the only serious objection we have heard made to it is, that it cannot be made to cut fodder of any required length. In some cases it is also said to clog. The great fault of our machinists in making agricultural implements is, they do not make them strong enough; they do not use iron enough to give the required firmness. Farmers do not handle tools or machines, as they are treated in workshops; they do not notice the first signs of displacement of the parts, and take precautions against further damage, and therefore all such implements require the greatest firmness and strength.

We hope the hints of our correspondent will receive attention; and shall readily give place to a notice of farming implements, such as he has desired.

Poudrette.

"Is poudrette a good manure on clay soil? On what soil is it most beneficial? Mine is a clay soil and I have intended to try some of the manure this season.

"J. C., *Freehold, N. J.*"

In the several experiments in the use of the Poudrette in this country, the details of which have been published, we find no mention made of the character of the soils on which it was used. We therefore copy the following from a French periodical, as an answer to the above inquiry:

"1. Poudrette is a perfect substitute for common dung, whether with respect to price or quality. 2. Its favorable effects essentially depend on the moisture of the season. 3. In dry years it is less efficacious upon sandy soils than upon very greasy or medium clays. 4. It is

particularly suitable to very greasy clays. 5. By virtue of the lime and ammonia which it contains, it quickens and develops the inert humus, and the humic acid which often accumulates in the soil. 6. The Poudrette combined with organic matter, or in the state it is actually made, is a powerful means of rendering clay land friable."—*Le Cultivateur for August*, 1838.

The Strawberry.

"J. U. H." of Waylandsburgh, Va. who has requested some information on the culture of the strawberry, is informed that the soil best adapted to this delicious fruit, is a rich garden mold, deep, and rather moist than dry, but free from any stagnant water below the surface. In preparing it for the reception of plants, nothing more is necessary than to make it loose, and fine, and free from all weeds, roots of grass, &c. The roots may be planted either in spring or autumn, as most convenient; but spring planted vines cannot be relied on for fruit the same season, unless, in transplanting, large quantities of earth are moved with the roots. If planted from August till October, they will become rooted, and produce abundantly the following season. If planted too late in autumn, the roots are liable to be thrown out in winter by frost, here in the north; a difficulty not likely to occur with our correspondent. Two modes are pursued in planting, each having its advocate; one is, to plant in hills at about eighteen inches distance, and the other is, to place the roots in drills some two feet apart, and the plants six inches in the drills. In either way, they can scarcely fail of succeeding, if the ground is kept free from weeds, the useless runners eradicated, and the earth properly stirred and manured once in each year. The strawberry should find a place in every garden; and, considering that, with care in the selection of varieties, this fine fruit may be had from June to October, it is surprising it receives so little attention.

SPRING CROPS.

The Pea, as it is not liable to be injured by frost, may be put into the ground early, and should be, when it is intended as a green crop to precede wheat, that it may be taken from the ground in time for that grain. The pea is an excellent crop, and may in many cases be cultivated to advantage by turning over sward land in the spring, manuring it first if necessary, rolling and harrowing to make a loose level surface for the reception of the seeds, and covering them by the harrow, followed by the roller. In this way the pea is considered a fallow crop, taking the place of a summer fallow, and the turf and the added manure is thoroughly decomposed and fitted for the reception of the wheat. On all suitable soils, peas should be sown before this month; but it has sometimes been desirable to sow peas so late as to have them escape the ravages of the pea bug, and those put in as late as the middle or twentieth of May are apt to do this; but a heavy crop from such late sown plants can hardly be expected.

Potatoes are a crop that may be planted early, or at almost any time between the middle of April or the middle of June, with a reasonable prospect of a crop. Dry sandy soils are not as good for potatoes as one containing more vegetable matter, more moist, and consequently more cool. The varieties the best for the table are rarely abundant bearers, the Pinkeye or the Mercer for example, though fair crops of these are sometimes grown. The Long Red, the Sardinia, and now, the Rohan, are considered the most productive, and of course the best for general cultivation or for feeding. The Rohan seems destined to introduce a new era in potato culture, and valuable as this root has proved, shows that by originating new varieties, greater excellence and greater productiveness may be expected. Potatoes may be planted in rows or in drills; they may be planted whole or in sets, and if the soil is of the proper quality, and the after culture good, the crop rarely fails. Last year a farmer in Vermont, turned over a piece of turf land carefully, rolled it well and leveled, and then with a stick made holes a few inches in depth between every second furrow slice, into which a potato set was placed, and the holes filled up with mellow soil to the level of the field. The piece had *no further labor* put upon it, and the crop was at the rate of 400 bushels to the acre. Thirty-two loads of manure to the acre was placed on the turf before plowing, and turned under, and the sets were placed two feet apart in the rows. Where potatoes are planted on clean sward land, some have recommended that pumpkins should be planted with them, as usually a good crop of pumpkins may be obtained with little or no injury to the potato crop.

Corn is one of the most important crops grown in the United States, and every thing relating to it demands unusual care and attention. The selection of seed, choice of soil, preparation of land, after culture of the crop, are all things that must be well looked to or a partial or total failure of the crop may be expected. While the average corn crop is not more than 35 or 40 bushels per acre, multitudes of instances are on record in which more than 100 bushels have been grown, and a few of more than 150 bushels to the acre. Last year in one county in New-Hampshire, no less than three premiums were claimed for more than 130 bushels to the acre. It is idle to plant corn on land not naturally dry, or that has not been made so by draining. There is no crop grown that more delights in warm dry soil than maize, and there is none that will resist the effects of drouth longer. The soil too must be rich. A poor soil, and good corn, are incompatible. Corn is one of the crops to which manure may be applied the most advantageously, and if mixed with the soil, there is scarcely a possibility of applying too much. If unfermented stable manure is used in the hill, too much may be injurious, as instances have occurred in which the vitality of the seed has been destroyed or materially weakened from this cause. For use in the hill, the manure of the hog pen or yard is superior to any other; and the drier the ground the greater will be the effect of applied manures. Corn is a plant that requires an elevated temperature from planting until ripening, and seed corn will rot at temperatures in which peas, potatoes, and spring grains would vegetate well. Corn should be planted as soon as the ground is sufficiently warm and dry, and not before, and if it is not in this condition by the middle of May, a crop of the ordinary varieties of corn need not be expected, as in our northern latitudes, the time required for bringing it to perfection could barely be found in our summers. There are few plants cultivated, the goodness of which is so much depending on after culture as corn. Whatever may be the variety, the state of the ground, or the climate, corn will not give a great yield, or prove profitable, unless the strictest attention is paid to this point. If allowed to remain smothered in weeds, and the earth about the plants unstirred, corn need not be expected. In all cases, we believe cutting up the corn by the roots to be the best method of harvesting; and where this crop is to be followed by wheat, this course is indispensable. The proper time is when the ears are well glazed, and before the stalks have become dry. Cut up and secured in this way, the corn is of the best quality, and the whole of the fodder, an important item, is saved for the winter.

JERUSALEM ARTICHOKE.

Some experiments with this common root are on record which would seem to show that, with proper management, it might be made valuable in cultivation, particularly as a winter food for store hogs. Once introduced into a piece of light rich ground, it is not eradicated without considerable difficulty, as all those who have planted it in their gardens are aware. In the kitchen garden, the artichoke should always have a place, as the fresh roots in the spring, gathered and sliced thin and eaten with vinegar, are relished by most people; and they make a very good article for pickling. If intended for swine, they should be planted at least two years before the swine are turned into them; after which, the annual rooting of the swine will be all the cultivation or stirring of the earth that will be required. The smallest pieces are sure to grow, which renders their propagation as easy as their extirpation is difficult. If the roots are allowed to remain in the ground too long, they grow wormy, and decay; while the roots of one year's growth are smooth and fair as potato tubers.

AGRICULTURAL SOCIETIES.

Oswego County.—We noticed in our March No. the formation of an agricultural society in this county, and had intended to have published its constitution, adopted at a meeting in February, but have not been able to make room for it. We are pleased to learn that at a meeting since held, a very liberal Premium List was made out, and that efficient measures are being taken to promote the objects of the society, the result of which will be exhibited at their autumnal Fair. The following is a list of the officers of the society:—Col. U. G. White, of Oswego, President; Arvin Rice, Esq., Hannibal, 1st Vice-President; Joseph Sandford, Volney, 2d do.; Jacob I. Fort, Oswego, Treasurer; Dwight Herrick, do., Secretary; Edwin W. Clarke, do., Corresponding Secretary; Joel Turrill, Oswego, Orlo Steele, Scriba, Wm. Ingalls, Granby, Executive Committee.

Yates County.—An agricultural society was formed in this county on the 14th of March, under favorable auspices, the constitution of which will be found on the cover of this sheet. The officers are as follows:—John Hatmaker, Milo, President; Henry Spence, Starkey; John Spicer, Barrington; Henry P. Sartwell, Milo; Samuel Wise, of Benton; Henry Husted, Potter; D. B. Lindsley, Middlesex; Uriah Handford, Jerusalem, and Elisha Doubleday, Italy, Vice-Presidents. Charles Lee, Milo; Benj. Tuthill, Starkey; A. F. Whittaker, Benton; George Wagener, Jerusalem; James P. Robinson, Potter; Joseph McCain, Barrington; Alexander Basset, Middlesex; and Elisha Barker, Italy—Executive Committee: D. A. Ogden, Penn-Yan, Corresponding and Recording Secretary: Eben Smith, Penn-Yan, Treasurer.

THE DISTRICT SCHOOL JOURNAL.

We have received the first number of a paper with the above title, issued at Geneva, and edited by Francis Dwight, Esq. It is in the quarto form and published monthly at $1 per annum.

New-York has laid broad and deep the foundation for universal education; and it remains to be seen what use will be made of the magnificient provision she has provided, what advances in the department of education will be accomplished, and how far the hopes and wishes of the friends of instruction and learning are to be realized. We think the adoption of the District Library system, one of the most decisive improvements made to extend useful knowledge in the state, and engrafted as it has been on the school system, it cannot fail of the happiest results. As the means of still more widely diffusing a knowledge of our system; of awakening an interest in the great subject of education; of bringing the best modes of teaching before the public, and thus correcting some of the numerous evils which all admit to exist, we hail the appearance of this Journal, and if conducted with ability, which we cannot doubt, it cannot fail of rendering the most essential service to the cause of public instruction.

As this journal will contain the decisions of the Superintendent of Common Schools, on the various questions which arise and are submitted to him from the districts, it is clear that it should be in possession of every school district in the state, and we think each district should receive a copy, to be preserved by the clerk for the use of the district; and this might readily be done by the vote and at the expense of the district. All teachers, and all who feel an interest in the cause of education, should afford it an early and cordial support. It will contain original papers on all subjects relating to teaching, education, and the kindred topics, and will doubtless be a standard work on these topics. As such we cordially recommend it to our readers.

DOMESTIC ECONOMY.

It may not be amiss to say here, as we propose at the solicitation of our lady subscribers, to give a monthly paper on subjects embraced in the term domestic economy, that we are not versed in the mysteries of the kitchen; or Dr. Kitcheners, in the science of cookery; yet we do not intend to give place to any directions that are impracticable to the many, or which we have not the best assurance from our own experience, or that of our friends who furnish them, will fulfil all that can be expected of them. In most of the preparations of cookery for the table, there are varieties of richness, and while we would earnestly recommend both on the score of *economy* and *health*, contentment with the plainer sorts of fare, we shall endeavor to give such directions as will satisfy all reasonable appetites, and furnish specimens of both the simple and plain, and the rich and expensive.

Plain Indian Puddings—Baked.

Scald a quart of milk, (skimmed milk will do,) and stir in seven table spoonfuls of sifted Indian meal, a tea spoonful of salt, a tea-cup full of molasses, and a great spoonful of ginger, or sifted cinnamon. Bake three or four hours. If whey is wanted in the pudding, pour in a little cold milk after it is all mixed. This is both economical and good.

Rich Baked Indian Pudding.

Boil a quart of milk, and add a pint of fine Indian meal. Stir it well. Mix three table spoonfuls of wheat flour with a pint of milk, so as to have it free from lumps. Mix this with the Indian meal, and stir the whole well together. When the whole is moderately warm, stir in three eggs well beat, with three spoonfuls of sugar. Add two tea spoonfuls of salt, two of ground cinnamon or grated nutmegs, and two table spoonfuls of melted butter. When the pudding has baked five or six minutes, stir in half a pound of raisins; and add half a pint of milk for them, as they will render it too dry.

Rich Bread Pudding.

Cut a pound loaf of good bread into thin slices. Spread them with butter as for eating. Lay them in a pudding dish—sprinkle between each layer of bread, seeded raisins, and citron cut in small pieces or strips. Beat eight eggs with four table spoonfuls of rolled sugar, mix them with three pints of milk and half of a grated nutmeg. Turn the whole on the bread in the pan, and let it remain till the bread has taken up full half the milk; then bake about three-quarters of an hour.

In making boiled puddings, it is essential that there should be water enough to keep the pudding covered, and that it should not be allowed to stop boiling from the commencement to the close. Water may be kept boiling in a tea kettle to pour in, as that in the pot boils away. An old plate at the bottom of the pot will prevent the pudding from sticking, and when it is done, if the bag is dipped in cold water, it will come out of the bag easier.

Indian Boiled Pudding.

Make a stiff batter by stirring Indian meal into a quart of boiling milk or water. Then stir in two table spoonfuls of flour, three of sugar, half a spoonful of ginger, or two tea spoonfuls of cinnamon, and two tea spoonfuls of salt. If any thing extra is required, add two or three eggs well beaten, but they can be dispensed with, and some add a little chopped suet. Such puddings require a long boiling. They will be good in three or four hours, but better for being boilded five or six, and some give a boiling of eight or nine. They require good sauce at eating.

Sauce for Puddings.

Common sauce may be thus made. Stir flour and water into boiling water, and sweeten to your taste with molasses or sugar. Add a spoonful of rose water, and a lump of butter half the size of a hen's egg. A glass of wine added with grated nutmeg, will make it very good. If sauce rather better than common is required; take a quarter of a pound of sugar, and the same of butter, mould them well together with your hand, adding a little wine. Mould it into a lump, and set it away to cool. Nutmeg must be grated over it, and it is fit for use.

Address before the Tompkins Agricultural Society.

We have received from the respected author, L. A. Morrell, Esq. an address delivered before the Tompkins Agricultural and Horticultural Society, together with the by-laws of the society, list of premiums, &c. all of which we should be pleased to lay before our readers, did not the space required forbid. We should be the more pleased to do this, as the whole proceedings are marked with an energy and spirit auspicious of the best results. But while we are unable to place the whole of this able address on our pages, there are some passages containing important truths, so well and forcibly expressed, that our readers will thank us for a few extracts. On the benefit of agricultural associations, Mr. Morrell remarks as follows:

"As it is generally conceded that associations of the kind we have formed, are useful almost wholly on account of the knowledge received and imparted, when called together, we will confirm this by introducing a practical illustration. Suppose that one of you at the Annual Fair, should receive the premium for producing 50 bushels of wheat, or 500 bushels of potatoes to the acre; when it is a well known fact to us all, that not more than from one-third to one-half, is the average production of those crops in this county. The inquiries will at once be set afloat—what was the character of your soil? What crop preceded? What the quantity, and the kind of manure applied? How often plowed? In short, the whole *modus operandi*, will be elicited and made known. Each one of us will go home fully persuaded that there is some radical error in his mode, arising either from the character and preparation of the soil, or the culture; or else why the disparity in the quantity generally produced, and that by yourself? One and all will then be aroused to adopt your method, and the consequences will be, under like circumstances of season, &c, that we shall produce as much, or an aproximation to it. Self-interest will prompt us to make the effort, and a laudable emulation to out-do you, will cause a pleasurable excitement; and when we can learn that there is another path than that which ourselves and fathers and grandfathers have trodden, it will be exchanged for the one which leads to a surer and increased reward for our labors. The exhibition of our Fairs, of domestic stock, would afford another illustration of the benefits of agricultural societies; but it would be doubting your good sense to proceed farther; preferring to leave it to such occasions, and to time, to test the soundness of our views and arguments.

"The organization of a body of men for some given object, presupposes that there is some good to be effected, or improvement to be accomplished; and this implies, that there are errors to eradicate, and reforms, therefore, necessary. If our system of agriculture were perfect, this association would, indeed, be useless; to attempt to prove that it is *not* perfect, would be a waste of words; for we hope that no farmer in this county is so full of worldly wisdom, as to suppose that he has attained the point of perfection, and has nothing farther to learn. If there be any such, we kindly advise them to take heed, and to arouse and shake off the unprofitable delusion. We tell them that this is truly the locomotive age of improvement of agriculture:—and that, while they are at rest, their fellows around them will be advancing, and gathering up by the way sides the rewards which the sciences applicable to agriculture have so thickly scattered in the paths of the improved systems."

The miserable system of farming pursued over so large a part of the United States, is thus graphically sketched by Mr. M. Its truth will be apparent to all.

"We will state in plain words the system to which we are opposed, viz: *the repetition of crops, or otherwise, growing the same crops successively on the same ground, without an intermediate change, or rotation.*

"This system is antique, is generally followed, and has not inappropriately been called the '*skinning system.*' It had its origin in the unparalleled fertility of our soil. Ungrateful man, however, refused to give back a portion of what he took from it, or give it rest, that its exhausted powers might in a measure, be restored; and the consequence is, that millions of acres, which were originally fertile and exceedingly productive, are now comparatively as sterile as the desert. For the proof of this, we point to many districts in Maryland, and farther south; and it is this system, in a great measure, which has disabled the hardy New-England farmer from reaping those crops, which were wont to grow on his once fertile soil. But there is no need of going beyond the precincts of our own county for proofs of the ruinous tendency of this system. It is upon the lips of farmers, 'that they do not grow as much wheat as they once did, and the *fault* is not theirs, for their crops are as well put in as they ever were.' Then, we ask, whose fault is it? 'Why Providence, say they, in sending such bad seasons.' We boldly deny it, and unhesitatingly charge it to the 'skinning system' which they have followed; and if the history of every acre of tillable land could be ascertained from the beginning, the charge would be proved to the letter."

The different effects of the old and the improved systems of farming, are shown by Mr. Morrell in the following extract, given as an illustration:

"The 'skinning system' and 'rotation system,' in their effects, can not be better illustrated, than by comparing them to a man who undertakes something requiring the exercise of great physical power and energy. Being fresh and vigorous, he is entirely successful. This is the first crop. If he attempts to accomplish the same thing over again without sufficient time to recover his powers, exhausted by the first trial, he fails to do as much; if a third time, still less: and at this period his strength is so materially diminished as to require much time before it is restored: and it may be that he never recovers it. But on the contrary, if after his first heavy task is performed, it is succeeded by a different and lighter one—and this represents the rotation crop—he will recover much of that muscular force of which he had been deprived; and then if he undertakes again his original task, he will accomplish it with similar ease and success. Man is truly the 'golden link in the great chain of creation;' he, however, but represents, and is himself subject to the great and benign laws which govern all nature: he requires *change of action* and *rest from exhausted effort.*"

In showing the benefits of rotation, and the improved system of farming, Mr. M. treats at length, and with ability, of the green crops, roots; such as the potato, ruta baga, sugar beet, the Rohan, with notices of silk, cattle, sheep and swine, and references are made to some of the ablest writers of the day in support of his positions. The address thus alludes to the subjects of Horticulture and Agricultural periodicals:

"There is still another subject of paramount importance, and which it is the special object of this society to promote, viz: *horticulture*, or gardening and cultivation of fruit. It may, therefore, very appropriately be termed a *fruitful* subject, and to master it, requiring the possession of nice sensibilities, a cultivated and discriminating *taste*, to which the committee claim no particular title. They consequently recommend the appointment of a committee, whose duty it shall be to report to the next annual meeting of this society, all the information they can collect relative to the best mode of propagating those varieties of fruit most congenial to our climate.

"Agricultural publications are truly as lamps to the farmer's feet. They disseminate the result of experiments connected with, and every species of knowledge calculated to promote the interests of agriculture and horticulture. The *Cultivator*, published at Albany, is above all praise, for the ability with which it is edited by two gentlemen profoundly learned in the sciences applicable to agriculture, and the possession of abundance of practical knowledge. If you would improve and advance in your profession, we say, take the Cultivator."

As useful for reference to those engaged in forming similar associations, (and we trust they are destined to be numerous;) we give the code of regulations of the Tompkins Society, on the cover of this number.

LIGHTNING RODS—INQUIRY.

"EDITORS OF THE CULTIVATOR—Can you give your readers any information as to the best methods of preparing and putting up rods, as conductors on our buildings? There is scarcely a year in which great damage of property, and not unfrequently loss of life, is occasioned by lightning. I think farmers should have their barns protected as well as their houses, as experience shows that they are the most liable to destruction, at the time their contents are the most valuable, that is, immediately after harvest. *York co. Pa.* L. T. P."

In erecting rods for the protection of buildings from the effects of lightning, a few things must always be kept in mind, in order to ensure efficiency and consequent safety. As the point of erection, the most exposed and elevated part of the building, should be chosen. If a dwelling-house, the chimney is the point that will require protection; if there are several of them, the most elevated one, the one most exposed to the general course of storms, as the westerly one; or if but one has a fire in it, that one will be found most liable to be struck by lightning, and will of course more require protection. Numberless recorded cases prove that all heated currents of vapor, whether rising from a chimney, or the masses of hay or grain in a barn, are excellent conductors of the electric fluid, and are to be considered as such in all arrangements for protection.

The materials to be used as the conducting medium or rod, is another point that should be attended to. Iron is the most generally used for this purpose, but copper is preferable, as it possesses greater conducting powers, is not liable to rust or fusion, and, being tougher, is not broken to fragments by an electric discharge, as iron sometimes is. The greater cheapness of iron, however, will probably continue its use, and when well put up, it gives all reasonable security. No iron rod should be used of a less diameter than three-fourths of an inch, and an inch rod is still better; as it must be remembered that the surface only has any effect in conducting electricity, and, therefore, the larger the surface over which it passes, the less intense its action, and the less danger of breaking or fusion. A small quantity of metal, if of the right kind, and a large surface given to it, will make a better conductor, than a larger quantity in an improper form. Thus, a copper ribbon, two inches wide, and of the proper length, will be superior to a copper wire of the same weight, as the process of rolling and flattening it, gives a much larger surface; and the same remark will be true in regard to iron. A number of small iron or copper wires, twisted into a rod, is better than a solid rod of the same weight, for the same reason; that is, a greater surface is exposed by the small wires than by the solid one, and this would be the best manner of constructing rods, were it not to be apprehended, that heavy discharges passing over wires would fuse and destroy them. Such have been recommended for ship conductors, as they would be entire, and flexible, and perhaps it would be found that the distribution of the fluid over such an extent of surface as such a rod would afford, would prevent the danger of fusion in any case.

In preparing the rod, the most essential thing is the making of the elevated points. These should be several in number, slightly diverging from the main rod, and the sharp points gilded or tipped with silver, so as to prevent their rusting, and losing, in a great degree, their conducting power. Perhaps the easiest mode of pointing them, is to make points of large silver wire an inch in length, turning a screw on one end, and insert this into an opening drilled in the tapered end of each branch of the conductor, to receive it. If wire of the proper size is not convenient, they may be made by cutting them from a half dollar, and hammering them into the right form. If the rod is made in pieces, they should never be put up by turning hooks on the ends, and connecting them in that way; as interruption to the fluid in its descent is frequently attended with bad consequences. The several pieces should be put together with screws, the connecting piece receiving the ends of two rods, and being as near the size of the conductor as strength and security will admit. The rod should never be secured to the building by metal staples or fastenings; or if such are necessary, the connection between the rod and these should be broken by pieces of glass, which is a non-conductor. Wood is the best for fastenings, and should only be used, except from necessity. It is not enough that the rod attract and receive the discharge; it must also conduct it to the earth, or no adequate security is afforded.

It has been estimated that a rod properly made, affords protection to five or six times the diameter of its height; that is, a rod standing six feet above a building will protect the building for thirty feet around it. Instances have been known, however, in which a chimney having a column of heated vapor rising from it, has been struck, when within the limits usually considered safe, in a protected building. In such cases the result must be ascribed to the height, and conducting power of the vapor. The foot of the conductor should gradually recede from the walls of the building, and enter the earth to such a depth as to reach moist earth, and if the bottom of the rod is pointed, or split and parted different ways in the earth, the passing off of the fluid will be facilitated. No paint should ever be allowed on a conductor.

LATE SOWING OF SPRING WHEAT.

At one of the agricultural meetings at Boston, Judge Hays, of Maine, stated that in 1838, he sowed some spring wheat of the Black sea kind, that it grew finely, and promised well, but was almost entirely destroyed by the grain worm. Believing that by sowing later, the season of the fly might be avoided, he last year sowed his wheat much later than usual, and from two bushels sown on an acre he had forty-one bushels. Other farmers who adopted his mode of practice, and sowed late, had good crops, untouched by the worm. He attributes much to the kind of wheat which he uses; as he has never known that wheat affected by the blight or mildew. The kind spoken of is a red wheat. In some instances where common spring wheat has been sown in the same field with the Black sea wheat, it was worthlesss, while the latter yielded abundantly, in one case at the rate of fifty-two bushels per acre.

LIME.

"Were lime a manure, it would be a noble substance for enriching and restoring fertility to lands worn out by a succession of crops; but, as worn out land is not restored to fertility by the application of lime, we are warranted to consider it in a different light; or, in other words, as an article to bring certain principles into action, previously possessed by the soil. This conclusion is sanctioned by experience; and experience is a far better guide than the most plausible theory."—*Morton on Soils.*

We think this short extract has, in a very few words, set right a matter of great importance to the farmer, and corrected an error which is prevalent, not only in Great Britain, but, also, to a considerable extent, in this country, viz: that lime will restore to fertility *all* lands that have been exhausted by cropping. But lime is not a manure, in the sense in which animal and vegetable matter is; it is not nutritive itself, it only assists in nutrition; and, however important the part it acts in this way, unless nutritive matter is existing in the soil, ready to be appropriated to the use of plants, the application of lime is entirely useless, so far as the restoration to fertility is concerned. Every one can see, that when all the vegetable and animal matter has been exhausted in a soil, by ceaseless cropping, and nothing but the primitive earths, silex, alumine, lime, magnesia, &c. of which it is composed, remaining, that the application of more of any one of these primitive earths, will add nothing to its fertility or capability of producing vegetation.

If, on the contrary, there is vegetable or nutritive matter in the soil, lying dormant for want of exciting agents, or in an insoluble state, and therefore inaccessible to vegetation, an application of lime, by removing one or both these causes, may render the most essential aid to the farmer, in the production of his crops. A neglect of this important fact has led to serious error in the use of lime, in England, and in this country. Because, in some cases, lime has produced the best effects, it was at once expected in all; and, because, where nutritive matter existed to be called into action by the lime, a great increase of the crops were the result, it was supposed that this effect could be renewed at pleasure; and liming, without manuring, became at once the order of the day. As must have been expected, a failure in the crops, in such cases, has been the result; and a prejudice against the use of lime, resulting from its application on false principles, has succeeded the most unbounded confidence in its favor.

Lime *is* a noble substance; it cannot be dispensed with in soils, but, like the other earths, it is powerless alone. The man who eats curry or cayenne with his roast beef, does not expect his nourishment from them—they are only the accessories—the stimulating agents. The farmer who has just views on the subject of vegetable nutrition, does not expect his plants to subsist on the lime, salt or gypsum he furnishes them; nor does he expect that these stimulants of themselves, without the application, in some form, of vegetable or animal matter, of which the plants can avail themselves, will restore fertility to exhausted soils, or continue it in such as now possess it. No farmer should forget that no single substance can ensure fertility; not one of the earths, or one of the stimulating or nutritive manures, can do this; the presence of all is necessary; and the best proportions ensure the greates. productiveness in any soil.

DICTIONARY OF TERMS
USED IN
Agriculture and its Kindred Sciences.

BITUMEN. This is the name of a species in mineralogy, chiefly interesting as forming the basis of a large part of the coals termed mineral coal, an article of vast importance to the arts, commerce, and comforts of life. It has acquired several names, from its appearance in its different states of consistency. *Naptha* is a fluid, of a yellowish tinge, transparent, and with a peculiar odor. It consists of carbon 82.20, and hydrogen 14.80. It is found in many parts of the world. *Petroleum* is of thicker consistence than naptha, in some cases resembling in color and consistence, common tar. It is in this state that it is found in such vast quantities in the United States, principally at the salines on the Kenhawa and Muskingum, at the depth of from 300 to 600 feet. It is also found on the Olean creek in this state, and is the article known as Seneca oil. At Rainanhong in Birmah, is a hill containing coal, in which more than 500 pits have been dug for the collection of the petroleum, and from which 400,000 hogsheads are taken annually. In boring for salt in 1838, on the Tombigbee river in Alabama, at the depth of 600 feet, the miners struck a vein of petroleum, which, flowing over the top in immense quantities, spread itself over the river for some fifty miles, and in that state was set on fire, forming a striking and brilliant spectacle. Compact bitumen, or *Asphaltum*, has lately attracted much notice from a new application, which, in connection with some other substances, has been made of it in paving streets, where its durability has been found to exceed granite. All the coal west of the Allegany mountains is bituminous, and some large beds of it occur on the east of this range.

BLAST. A disease of plants, to which by different writers has been given the name of blight, blast, and mildew. The latter, however, is evidently a distinct disease, and produced by different causes. Blast or blight has been divided into several varieties, affecting plants in different ways, and with varying intensity. Among these may be mentioned blight originating from cold. The north or easterly winds of spring often produce this, by freezing the tender shoots, or by retarding the flow of the juices. Thus the young fruits are deprived of their nourishment, and fall from the stem. Blast or blight from sultry wet weather, originating contagious diseases of plants, is another of the forms noted, and mildew sometimes seems to result from this cause. The blight which sometimes strikes the grain of whole districts, would seem to be owing to atmospheric causes thus generated, since the disease appears to follow, and be governed by the course of the winds. Blast from the want of nourishment, is another form of the disease, but of which the cause is usually obvious. Impoverished land, too great quantities of seed, or injudicious culture, may produce this blight, but in this country, it is oftener observed as an effect of drouth. Blast from *fungi* is the kind of blight which attacks grain also, and which has been erroneously attributed to particular plants, as the barberry bush, since the fungi on the leaves of this plant, and those that cause the blight in wheat, are clearly distinct.

BLINDNESS. No animal is so subject to blindness as the horse, and in most cases it can be clearly traced to the treatment they receive. Severe drawing in the harness, or racing, either on the course or otherways, will not unfrequently produce blindness, sometimes temporary, but often permanent. An examination of the pupils of the eye, will most usually enable an observer to determine whether there is blindness or not. If the pupils, when exposed to light after being in a dark stable, contract, the horse is not blind; if they contract unequally, or one not at all, then the vision is imperfect, or gone in one of the eyes. The hand placed close over the eye for a few minutes, so as to render the eye dark, will show the dilation or contraction of the pupil, when no other convenient means of excluding light are at hand. A horse, blind with both eyes, will usually have his ears in constant and rapid motion, directing them in quick succession to every quarter, relying on hearing rather than sight; he will lift his feet high, as if he were stepping over some obstacle, when there is actually nothing in the way. It is a common saying, that *wall-eyed* horses are never blind. This is probably an error; as there appears no difference in their structure to warrant such an inference.

BLOOD. The circulating fluid of animal bodies, and by means of which the functions of nutrition and life are carried on. Blood is usually divided into arterial blood, which is that given by the lungs to the heart, and by that thrown into the arteries of the system, and the venous blood, which is returned to the lungs through the veins from the surface and extremities. The venous blood is of a dark purple hue when passed into the lungs, and it leaves them of a rich vermillion color. This change is effected by the absorption, while in the lungs, of oxygen, from the atmospheric air with which they are filled in breathing. Messrs. Macaire & Marcet of Geneva, in a series of experiments on the blood, demonstrated that the difference between arterial and venous blood, was as follows:

	Carbon.	*Oxygen.*	*Nitrogen.*	*Hydrogen.*
Arterial blood,	50.2	26.3	16.3	6.6
Venous blood,	55.7	21.7	16.2	6.4

Blood is of much use in some of the manufacturing processes, some valuable coloring pigments being derived from it. From the large quantities of albumen it contains, it is the principal ingredient in freeing sugar or molasses from its impurities, previous to the conversion into lump or loaf sugar. Blood is found to be one of the most powerful of manures when applied to the ground; and large quantities of it, mixed with other materials, are obtained from the slaughter-houses of our principal cities, and appropriated to this purpose. When animals are attacked with fever, one of the surest remedies is bleeding, either local or general, as the cause may demand.

BOG. A swampy piece of ground, usually containing large quantities of vegetable matter, frequently of the nature of a quagmire, and with tufts of coarse grass mingled with aquatic plants spread over its surface, is in Europe, and usually in this country, termed a bog. Such pieces of amphibious soil, are not common in the United States, but in Scotland and Ireland, a very considerable portion of the surface is occupied by such nonproductive lands. Where bogs exist, the only modes of bringing them under culture, are, by draining or covering the surface with firm earth, and frequently it is necessary to combine both operations. Draining the land consolidates the surface, and affords opportunity to cut off the bogs or coarse tufts of grass, and introduce more valuable grasses, if not to submit it to the action of the plow. Where the boggy ground is mostly composed of vegetable matter it is desirable to incorporate the common earths with the surface, thus giving increased powers of production, and greater firmness. Gravel or sand may be carried on when the ground is frozen, if the surface is not hard enough at other times, and by thus uniting draining and the application of earths to impart consistence, such soils, worthless in their natural state, are rendered most valuable and productive.

BONE. The frame work of animals, constituting the osseous structure or skeleton, is called bone, and is composed of several ingredients, the principal one of which is the earth called *phosphate of lime*. This material appears to have been selected for this purpose, as forming much harder compounds with animal membrane than the carbonate, which is used in the composition of shells. The harder and more solid the bone, the greater the proportion of the phosphate; thus the bony portions of the ear, are very hard, and they consist almost wholly of the phosphate. The long part of the teeth contains considerable carbonate, but the enamel, or the cutting parts, which sometimes approaches to the hardness of steel, is nearly pure phosphate. The composition of bone can be determined by fire, or more accurately by the acids; and they are found to consist of phosphate of lime, a small quantity of carbonate of lime, the whole cemented together by a strong elastic animal membrane, to which is added oil, of which the principal depository is the interior of the bone. The use of bone dust, or bones reduced to powder by grinding, has introduced a new era in agriculture in some parts of the world. Crushed bones were first extensively used as a manure in the counties of Lincoln and York, about the beginning of the present century; and they are now considered the best and most efficacious application that can be made to the soil. It has been estimated that by extending the growth of the turnep crop to districts where it was not before grown, and thus increasing the means of raising cattle and sheep, and through these indirectly, the culture of wheat and barley, the means of subsistence in England has been increased one-fifth. Twelve bushels per acre drilled in, is the usual allowance, but it is sometimes sown broadcast, and the quantity varied from ten to twenty bushels an acre. The experience of farmers who have used this manure, shows that it succeeds best on light, dry calcareous loams, or in general on any soils that are dry, and do not contain too much alumine. If sown broadcast, the better way is to mix the bone dust with earth and let it slightly ferment before spreading on the land. With turneps, and for these as a manure it is unrivaled, the practice is to drill it in with the seeds. Bones that have undergone fermentation, are superior to those that have not undergone this process, and their effect on plants is more rapid. Where land is much impoverished, thirty bushels per acre have been used with success. In this country they are well spoken of, and mills for grinding the bones have been erected in various places. It is evident from the chemical composition of the bone (salts of lime and animal matter,) that its action on plants must be energetic, and such is found to be the case. The finer the dust, the more rapid its action, while as a matter of course, that which is not so fine, is the most durable in its effects.

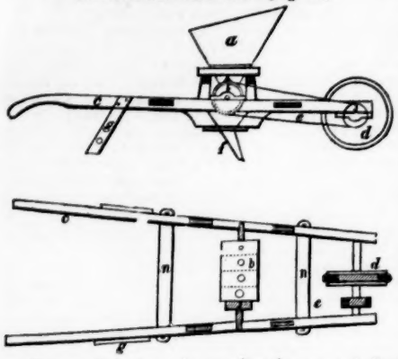
BOTS. It is well known that most animals are infested with particular kinds of parasitic vermin that prey upon them, either externally or internally. Thus the ox, horse, sheep, and even man himself in the tropical regions, are attacked by the fly, the species different in the different animals, and the larvæ deposited on the hair, on the mucous membrane of the nose, or in the flesh, lives on the body to which it is attached until it is prepared to undergo its last transformation and become a perfect insect. These flies belong to the genus *Œstrus*, of Linn. and the parent of the bot, or the one that attacks horses, is the *Œstrus equi*. The female of this fly is known at once by the extremity of the abdomen being lengthened, and turned under the belly so as to form an ovipositor for placing the eggs on the hair of the horse. As this fly does not bite, it does not occasion that terror to the animal it attacks, as is produced by some of the species of gad-fly, and a horse will continue quietly feeding while the œstrus, continually on the wing, is busy depositing the eggs on the hairs. The place selected by the fly is generally on the inside of the knees, or the sides of the horse, always avoiding those parts that the horse is unable to reach with his mouth or tongue. On these points the eggs are rapidly deposited, being fastened to the hair by a glutinous substance. This substance dries, and the egg is firmly attached to the hair, where they remain some four or five days, at which time the larvæ is ready to burst the envelop, and a slight application of warmth and moisture is sufficient to effect this. If at this time the tongue of the horse passes over the hairs to which the larvæ are attached, the operculum or cell is instantly opened, and the worm, small and white, adhering to the tongue, passed with the food into the stomach. This fact of the quickness with which the living worm will be produced when the egg is ripe, may easily be tested by placing some hair containing eggs or nits in the hand slightly moistened with warm water or spittle, and closing it upon them. They may even sometimes be *hatched* by drawing the moistened hand slowly over the hair of the horse, the worms, lively and vigorous, remaining on the hand when removed. When the bot has descended into the stomach of the horse, it attaches itself to every part of the inner coat, but oftener about the *pylorus* than elsewhere. From this account of its production, it is evident the numbers in the stomach may vary from a dozen, or twenty, to several hundreds. They are usually in clusters, attached to the membrane of the stomach by two hooks or tentaculæ. Some writers have maintained that these hooks are on the tail, instead of the head of the animal, and consequently as it is suspended by that extremity, the idea of its penetrating the coat of the stomach, and thus causing death, is absurd. The researches of Messrs. Youatt & Clark, however, prove that it is by the head the insect is attached, and that they may at times prove fatal, though such instances they conclude are very rare, and that on the whole the bot is rarely productive of injury to the horse. When the bot has attained its growth, it quits its hold, and passing through the intestinal canal, falls to the ground, in which it secretes itself and enters the chrysalis state, from which in due time it emerges, a perfect insect, and recommences its round of propagation.

BOULDERS. In almost every part of the world, masses of rock or stone are found, from the weight of many tons down to a few ounces in size, and rounded by attrition, or angular, as when broken from the quarry. Such rocks are frequently many miles from the place of their original formation and deposite, and by fixing their original location, they greatly aid in determining the nature and direction of the causes that in former ages have acted on the face of the earth. In examining the country from Boston to the Mississippi, and tracing the boulders which are scattered over almost the whole of this extensive region to their original deposite, it will be found that they have been in nearly every instance driven from the north in a southern direction. Thus the greywacke boulders found in the valleys of Berkshire, are traced to the west and north of the Hoosic range, over which they have evidently been forced. All are aware that there is no primitive rocks south of the Ontario in the state of New-York, yet the whole surface is found sprinkled with boulders, which, from the character of the rocks, must have been derived from the primitive ranges in the St. Lawrence district and north of the Ontario. Boulders of gneiss, weighing many tons, are found on the elevated lands of Allegany and other southern counties, which have evidently been transported from the north to their present situation. Perhaps there are few of the rocks of the transition or secondary classes more distinctly marked, and more easily known than the red standstone of the whole southern shore of Lake Ontario, particularly the strata immediately under the bed of iron ore that reaches from Oneida county into Canada; yet blocks of this very stone may be found in great numbers, on the high lands of the dividing ridge, forty miles south of the outcrop of this deposite near the lake, and twelve or fifteen hundred feet higher than the original location. So to the south of the great limestone deposite, boulders of this rock are very numerous. Within five miles, where stones are collected for walls, these boulders are found in some places to constitute one-half or one-third of the stones gathered from the fields. As we recede to the south, their number and size become less, and scarcely a trace of them can be found. North of the outcrop of this limestone formation, few or no boulders of this stone are found, even though all the streams flow across it in that direction, thus demonstrating that their removal to the elevated ranges south, was effected by force, and that the force exerted was from a northern quarter. Boulders exercise much influence on the agriculture of a country, by their size and numbers, and by the material of which they are composed. Thus a country occupied by limestone or gypseous boulders, is more likely to be adapted to the culture of wheat than one in which the granitic form prevails. So uniform has been the course of the boulders on this continent, the northern part particularly, that the presence of any kind of rock or earth, may be considered proof that the location of the rock, or the strata from which the earths was formed, may be found to the north of its present position.

To save a multitude of conjectures as to the course of the wind and the temperature of the weather, provide a weather cock and a thermometer. The first any farmer can make and put up, on some elevated part of his buildings; the last can be purchased for a triffle, and will be found useful in more ways than one.

Communications.

Bartle's Drill Barrow—[Fig. 46.]

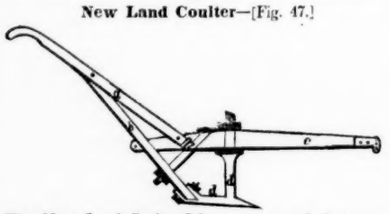


a. Hopper of tin, to set in cast iron hopper, A. *b.* Seed barrel of iron, brass or hard wood. *c.* Handles, 5 feet long, 2¼ inches by 1¼. *d.* Wheel 17 inches diameter, with inch bead to make furrows. *e.* Leather band or strap. *f.* Conductor, of tin or leather. *g.* Legs 2¼ inches by 1¼. *n.* Slats 2¼ inches by 1¼. *i.* Band wheels, each 4¼ inches diameter. The frame is made of white pine, screwed and mortised together.

Messrs. Editors—The above drill barrow has been invented by Mr. Andrew Bartle, and used by him for the last year. It answers beyond the anticipations of himself or friends.

The seed barrel is 5 inches long, and by the hopper, is divided into four parts. No. 1, (or that on the left,) is so arranged as to sow turnep seed. No. 2 for onions, and will answer for carrots, (the latter should be rubbed between the hands, before painting,) No. 3, for beets and mangel wurtzel. No. 4, for garden peas and ochra. The holes in the cylinder (six for each kind of seed) are made in each case, to hold 3 or 4 seeds; and each reamed out a little larger on the surface of the cylinder that the seed may be discharged with ease. For turneps, onions, peas and ochra, the chain will answer well for covering For beets and mangel wurtzel, the rake or harrow is used. The object of Mr. Bartle is to let the agricultural community have the free use of his invention or improvement. A. B. McCLEAN.

New Land Coulter—[Fig. 47.]

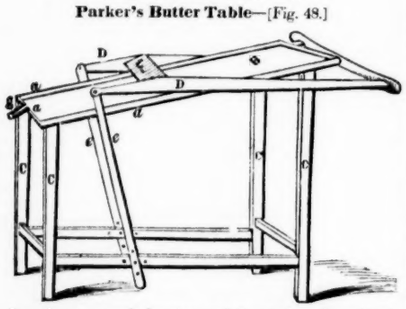


The New Land Coulter I have not seen laid down. I consider it a valuable implement; and one that should be in the possession of every farmer who has new land to take up; it is sufficiently strong to be worked by three or four mules or three yoke of oxen, and will nearly do away the necessity of grubbing. The handles *a*, are fixed on to the sides of the beam and supported at the head of the heel piece *b*, by a strong oak or hickory pin.

The beam *c*, is 4 by 5 inches in the centre and 3 by 4 inches at the ends. The heel piece *b*, is 2½ inches square at the lower, and 3 inches at the upper end. The coulter *d*, is made of 1¼ inch square iron, and left full size; the brace and heel bolts are ⅞ round iron. A cleet is nailed on the side of the beam to hold an axe. A. B. McC.

Bryorfield, Elizabeth City Co., Va. March 24, 1840.

Parker's Butter Table—[Fig. 48.]

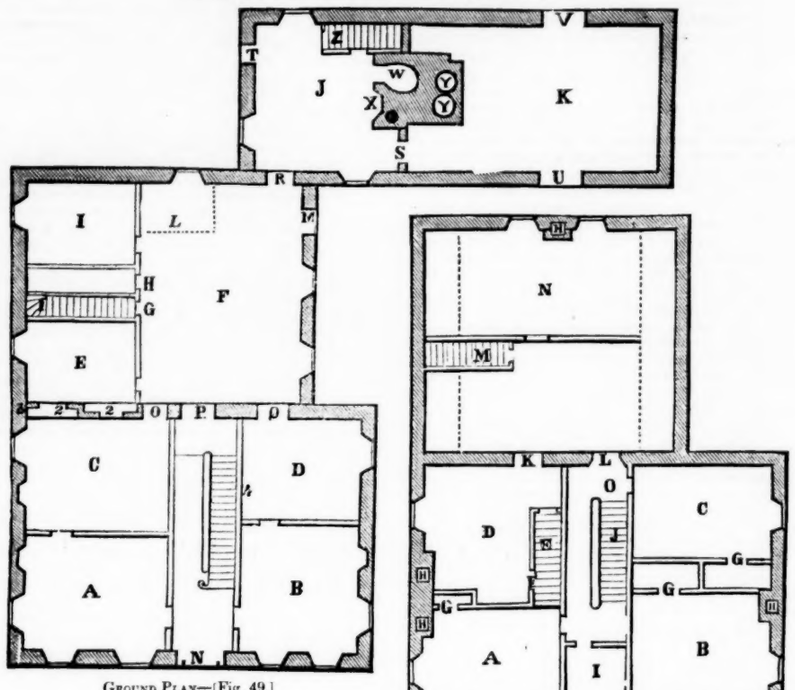


I send you a rough drawing and description of a table for working butter, invented by me, on which a woman, with a little practice, can work forty pounds of butter, and work in the salt, as easy as she can ten with a bowl and butter spoon. A joiner can make one in about a day. Every dairyman ought to have one. Any one who has a mind to build one, can. There is no patent on them. I sell the tables for $3.

Letters *a. a. a.* the sides and ends of the frame, 2¼ inches deep, 1¼ thick; sides 3 feet long; end 20 inches long, with a groove in them, 1¼ inches below the top, for the bed of the table B. to rest in, which ought to be ⅞ths of an inch thick. C c. c. c. legs, 26 and 21 inches long—D. D. arms, 3 feet long, 1 inch thick, with the handle framed across the ends—*e. e.* short arms 22 inches long, connected with the long arms with buts and screws—F. butter worker, 4 inches wide and 2 inches thick, on the back side, and worked nearly to an edge on the front side—*g.* spout for the butter-milk.

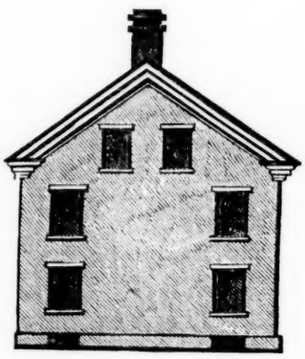
Trenton, Jan. 25, 1840. JAMES PARKER.

PLAN OF A FARM DWELLING HOUSE.



Ground Plan—[Fig. 49.]

Second Story—[Fig. 50.]



End View—[Fig. 51.]

Front View—[Fig. 52.]

Messrs. Editors—I transmit for your consideration the above plans of a Farm Dwelling-House; which plans and also the premium plans published in the 7th number of the 6th volume of the Cultivator, are original. Many, particularly those unacquainted with architecture, will suppose these several plans are a *fac simile* of their own dwellings, when in fact they may differ as much as a rectangle does from an ellipsis; to such I would say, reperuse, and convince yourselves you are in error.

In presenting to the public, plans of dwelling-houses, I am well aware that different persons, aside from their means in a pecuniary point of view, will have different tastes; some when about to build, will have a prejudice that any thing new, will not admit even of a perusal; they must build in every respect like their neighbor Mr. *Somebody's* house, though as inconvenient as it well can be—and probably cold enough to freeze water over night.

In this age, when improvements in agriculture, manufacturing, and the mechanic arts, &c., are the order of the day and the spirit of the age; I am right glad to perceive, that in many sections of the United States, liberal encouragement is given to improve our architecture.

Among the numerous arts and sciences that embellish life, there is not one more beneficial and ornamental to mankind than architecture; from the wigwam of the savage to the palace of the monarch, its utility is appreciated, and its advantages are acknowledged.

Rude and barbarous among the wandering tribes that seek shelter in the desert from the inclemencies of the seasons, and the ferocity of wild beasts that prowl for prey, it advances from the dictates of simple necessity to convenience and comfort, as we mount upwards through the scale of civilized society, till comfort gives place to the accommodations which contrivance provides for ease and luxury, and till it beams upon us with splendor in the mansions of the living, and the mausoleums of the dead.

If any one class more than another, are entitled to convenience, durability and elegance, it is the farmer—the hard-handed and honest-hearted farmer; whose industry, prudence and perseverance has gained him an independence, that no other art, science, or profession can boast of—and who may truly say, as did Selkirk,

I am monarch of all I survey,
My right there is none to dispute.

A habitation then for such an one to dwell in, should be convenient in all its apartments—of the most durable materials, and consequently finished in the most modern style of architecture.

In drafting the plans, and in making an estimate of the expense, I have calculated on a stone structure; the main building 38 feet long and 27 feet wide, with an addition in the rear 28½ feet by 24 feet—also, a wood-house, which is indispensable to a farmer, 52 feet long and 20 feet wide, off the length of which a wash room is finished, which would be convenient for a wash room or cheese room, adjoining the fire-place of which is the oven, and on the opposite side (the wood-house side,) an arch is built to receive caldron kettles for the use of the farm.

The estimate is made out as labor and materials can be obtained where I live—good building stone being a quarter of a mile distant, and of a quality that a sufficient quantity could be procured for water-table window sills, door thresholds, and window and door caps.

Being of opinion that an open fire-place is not as injurious to health, and certainly more pleasant than a stove, I have in addition to a fire-place in both front rooms, and one in the wash-room, placed one in bed-room C. on fig. 49, which would be found useful in case of sickness—the kitchen is intended for a stove, the chimney to receive the pipe, to commence in the wall immediately over the sink in the kitchen.

Let it be borne in mind, that the dimensions as above given of the main building, the rear part, and the wood-house, are, including the walls, which are two feet thick except the upper story of the main building, which is diminished six inches, leaving the wall eighteen inches thick.

Over the wash-room, is a room to keep and turn the cheese, accessible by stairs out of wash-room, which stairs also lead to room over the wood-house, convenient for a wool room, lighted from gable end of wood-house.

It will be perceived, that there is no communication from the back stairs or back part to the rooms in the main building on the attic story, except to room D. in order to keep the front rooms and front stairs clean.

Explanation of Fig. 49—A. & B. froot dining and sitting rooms, C. & D. bed rooms, E. bed room, F. kitchen, G. cellar stairs, H. passage to door 1, and back stairs, I. buttery, J. wash-room, K. wood-house, L. sink, M. back door, N. front door, O. door to room C, P. door out of lobby into kitchen, Q. door way into room D, R. door out of kitchen

into wash-room, S. door out of wash-room into wood-house, T. outside door, U. & V. wood-house large doors. W. oven, X. fire-place, Y. Y. arch, Z. stairs to cheese and wool rooms, 2. 2. close presses for rooms C. &. E. which may be made in the stone wall, by placing a lintel from 3 to 3, and make a stud partition underneath. In case the front stairs are partitioned underneath, there may be a close press for room D. at 4.

EXPLANATION OF FIG. 50.—A. B. C. D. I. N. are sleeping apartments, E. garret stairs, F. close press under said stairs, G. G. G. close presses, H. H. H. flues of the fire-places on fig. 49, J. front stairs, K. door out of back part into room D., L. a window to light landing O. of front stairs, which window is placed high enough to clear the roof of back part.

An estimate of the expense, as labor and materials could be procured in Rutland, Vermont.

518 perch of stone, delivered a quarter of a mile from quarry, at 50 cts. per perch,	$259 00
Laying 518 perches of stone wall, at 50 cents,	259 00
250 bushels of lime, delivered at 25 cts. per bushel,	62 50
1,200 bushels of sand, at 2½ cts. per bushel,	30 00
6 boxes of glass, of 50 feet each, at $3.12½ per box,	18 75
9,000 feet of lath boards, at $6 per 1,000 feet,	54 00
6,000 feet of lining boards, at $4 per 1,000 feet,	24 00
6,000 feet of spruce, 1¼ inch floor boards, at $10 per 1,000 feet,	60 00
Brads, locks, latches, &c. &c.	30 00
25,000 pine shingles, at $2.50 per 1,000,	62 50
700 feet of square timber, at 4 cts. per foot,	28 00
3,000 running feet of scantling, &c. for joists, rafters, studs, &c. at 2 cts. per foot,	60 00
10,000 feet of pine stuff, at $20 per 1,000,	200 00
2 setts of polished jambs and mantels, at $10 each,	20 00
2 do. common, at $4 each,	8 00
Plastering, including board and tending,	60 00
Painting and materials, do.	75 00
Joiners' and carpenters' work, including board,	600 00
4 hearth stones,	14 00
7 cwt. of nails, at 6¼ cts. per lb.	45 50
	$1,970 25
Expense of wood-house and wash-room, &c.	247 00
	$1,723 25

The above estimate is calculated for a plain but good workmanlike structure—and a brick building finished equally as well, would cost $1,650: Wood do. $1,500, all without wood-house and wash part—and with wood-house and wash room, for the plan as follows stone $1,970.25; brick, $1,897; wood, $1,745.

I have not given any plan of the cellar, on account of intruding too much, as I have already, on your columns; but I will here state, that the cellar windows ought to be placed perpendicular to the windows on fig. 49, and to have no cellar windows in the front of the house. The cellar may be bricked up on the inside, leaving a vacancy, and have double sashes, which will prevent frost from penetrating—cellar outside door, back and under the buttery.

A stone building can be built, to be as warm as either brick or wood, by building bond timber in the walls in their proper places, and battening to the same, leaving a vacancy between the stone and the plastering.

Those desirous of obtaining the above, or any other kind of plans, may procure the same at a moderate price, by addressing the subscriber, postage paid, at Rutland, Vermont.

Respectfully yours, JOHN CAIN.

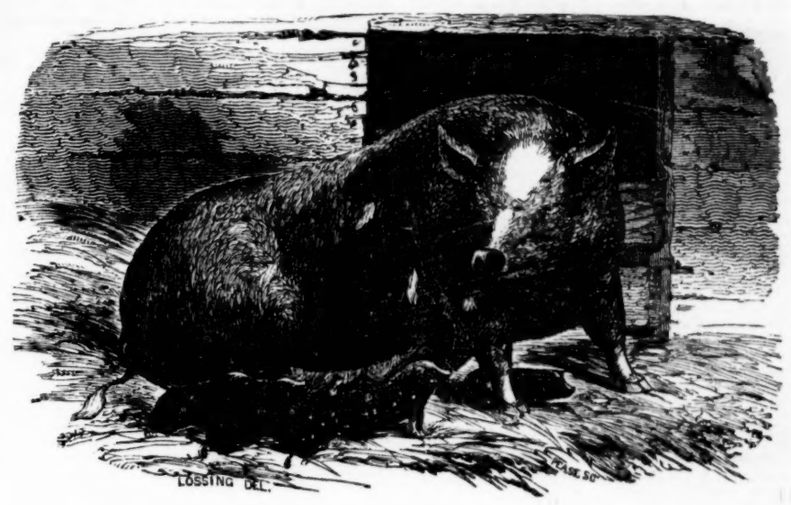
FARMING IN WISCONSIN.

As I have plenty of room, I will give you something in relation to this territory. It may prove interesting to some of your readers to know that there is yet a vast quantity of lands in this territory subject to entry at $1.25 per acre. It is as yet but partially settled, the lands bordering on the main thoroughfare only being taken up, leaving the interior, in which there is situated some of the finest lands in the United States, to the examination and selection of the immigrant. There are the counties of Dodge and Dane, in which the lands have been taken only in the neighborhood of the seat of government and a few scattering sections. Here, then, is a noble field for the emigrating farmer from the east. Thousands of acres of the finest wheat land in the world are yet to be found, together with water powers for the construction of mills, which are plentiful throughout the country. Lands in this vicinity have produced at the rate of forty bushels of wheat to the acre the last season. I think it can be asserted with truth, that a finer wheat country can not be found. Its growth sometimes is astonishing; we have seen it that stood six feet high, with a corresponding thickness of straw, and yield a fine berry. A great deal of spring wheat is raised, the country being so recently settled that winter wheat is not generally sown. Oats are raised in abundance, and are sold at from two to three shillings a bushel. The early varieties of corn are cultivated with success, for though we are farther north than Albany, we have a milder climate, which allows of the growth and perfection of this old stand by of the farmer. The Dutton corn is raised here, and generally answers all that has been said in praise of it. Barley and rye are not much cultivated; but in the root line we can go ahead of any body. Ruta baga, mangel wurtzel, sugar beets, carrots, onions, potatoes, &c. grow here to the greatest perfection. But it is useless for me to enumerate the different articles that can be cultivated in the territory; it must suffice to say that all that can be raised in the state of New-York or the New-England states, can here be raised in abundance.

I cannot close this without taking the pen in defence of the much talked-of, much abused Chinese corn. I have seen many remarks in favor and against it in the various papers, and I cannot satisfy myself to let this opportunity pass without offering a defence. I procured an ear from New-York last spring, and planted, and it answered every expectation. It yielded me at the rate of eighty bushels to the acre, and I have so great an opinion of it that I shall plant four or five acres of it this summer. It ripened in ninety days, and is a beautiful specimen of corn, growing very heavy and thick, forming fine fodder.

E. B. QUINER.

Milwaukie, Wis. Feb. 8, 1840.



BERKSHIRE PIGS.—[Fig. 53.]

MESSRS. GAYLORD & TUCKER—Having for some years paid much attention to this most valuable breed of swine, and having been frequently requested to give the history, marks of identity, statistics, habits, qualities, and properties of the animal, I have prepared the following, as a reply to the many queries I am continually receiving on the subject. Such a paper would seem the more necessary, as it is evident the grossest frauds and impositions have been, and probably will be, practiced by the unprincipled on the unsuspecting public.

For instance, a drover collects a few hundreds of swine, beyond, or in the west of this state, a heterogenous mass, comprising every kind, from the alligator to the snapping turtle. By the simple process of passing through Albany on his way down east, his drove becomes full blood Berkshires, though they may exhibit in color all the tints of the rainbow; and by the time he reaches Boston, it is not impossible certificates may be shown to prove the purchase from some noted dealer in swine.

The effect of this deception may be found in the remark which is frequently heard in distant parts of the country: "Our folks have tried the Berkshires, and find them to be no great shakes after all; no better than the common hog;" and well may the remark be made, as it is not probable these persons had ever seen a Berkshire pig in their lives. In endeavoring to palm off their black and white counterfeits, some have traced the genealogy of their pigs to Noah's ark, and found them to be the exact counterparts of the two saved in that vast menagerie; and others I presume, have traced their stocks to the garden of Eden, and find in their *white* Berkshires an emblem of the purity and innocence of that place, though I have never found white, except in the extremeties, to be any emblem of the Berkshire pig at all. The genuine Berkshires, were brought to this country in 1832, by S. Hawes, Esq. an English gentleman, who purchased Judge Spencer's seat, three miles from Albany.

Mr. Hawes, associated with several other gentlemen, in England, had, by a series of experiments and investigations, continued for more than twenty years, previous to his coming to this country, brought the full blooded Berkshire pig, to his present high excellence, a "noble animal," superior in symmetry and perfection, apparently conscious of the admiration he every where excites, and a noble monument of what the plastic hand of cultivation can effect over that otherwise uncouth, filthy, and devouring cannibal.

I was the first to procure the breed from Mr. Hawes in 1832. These pigs soon attracted general admiration; in 1834 and '5, they were first introduced into Ohio and Kentucky, and since that period, I have sent more or less of them to every state of the Union; and I understand they took premiums in every county in the two states above named, last autumn. Where the full bloods have been obtained, and continued without alloy, and not suffered to run out by breeding with those too near akin, nor let to run with other hogs, as they will in these ways surely degenerate, I have never heard but one opinion, and that of unqualified approbation. Mr. Hawes returned to England with his family in 1838, but through him and his agency, I have, since 1832, procured four fresh importations of the best animals—the last in the fall of 1839. With these preliminary remarks, I shall now proceed to point out some of the characteristics of the true Berkshire pig.

COLOR.—The Berkshire pigs imported as above, are principally black, with the ends of the hairs tinged with red or brown, giving them a beautiful brilliant changeable appearance in the sun, something like velvet of that color. Mr. Hawes informed me that he had never known a full blood to have less than three white feet, some white in the face or end of the nose, and occasionally white hairs interspersed over the whole surface—the end of the tail invariably white; there are, however, slight variations from the aforesaid color, as some are much less brilliant, their coats more sandy, and hair slightly inclined to curl. Pigs were imported from Berkshire forty years ago, nearly of the same color, but far inferior in point of rotundity, and other essential points of form. All the stock procured from Mr. Hawes, those which I have bred, and all the full bloods through any other channel, have been essentially the same in point of color. Four years since, I saw a boar, that the owner informed me he purchased from on board a ship, for a full blood. His form and color was right; and being anxious to get a fresh cross, I took Mr. Hawes to look at him. He said his appearance was good, and as a test, I might put him to one of my full blood sows, which I did. At the litter, two pigs were all black, three all white, the balance Berkshires. Mr. Hawes pronounced him a counterfeit; as the result proved he had blood of different races in his veins.

Considering the color as essential in determining the character of Berkshires, I have been much surprised at the efforts that have been made in some quarters to break down color as a test of purity. One maintains, that according to his information, they have as much white as black, in England; and that the color imported by Mr. Hawes, was merely accidental. Another somewhat extensive breeder or speculator in Berkshires, informed me, as an apology for full bloods of every color, that it was from a particular mode of breeding in England, that colors resulted. Perhaps peeled sticks have produced on swine there, the effects they once did on the cattle of Laban! There is at this time in the vicinity of this city, an imported sow, all white, and three others with about as much white as black; two of the males I have seen, and from their general appearance, I should not hesitate to call them impure. I have been informed that a planter from Kentucky, purchased a boar from a gentleman on Long-Island, entirely white, from a stock he had imported as Berkshires; and I have seen one bred in this vicinity seven-eighths Berkshire, purely white, retaining all the Berkshire points of form; but such will most certainly very soon degenerate into the common breeds. I have never met with a pure black Berkshire pig, although there are many advocates for them before the public.

I may add here, that last spring I saw an English gentleman emigrating to Upper Canada, who had a number of very fine animals he was taking on with him, cattle, sheep, and two pigs. He informed me, that he was born and raised in Berkshire, and had paid particular attention to making the best selection of animals to bring out with him. The color of his pigs agreed precisely with those of Mr. Hawes' importation; and he informed me, that it was the only standard color for the full blood. All colors were sold, he said, in England for full blood, and it was extremely difficult, if not impossible, for a stranger to procure such as could be fully depended upon. Mr. Hawes' importations he pronounced pure, and fine animals. I have the testimony of a number of other gentlemen well acquainted with the Berkshire pig in his native country, and they agree with the statement given as to color, &c. indeed, were this not the case with the pure bloods, it would seem strange, that the pigs sent out by Mr. Hawes, at four different times within eight years, should happen to be all of them within a few shades of the same color.

Whatever may be the intentions or wishes of those who have shown so much anxiety to break down the distinction of color, I think it would be as easy to introduce all white or all black leopards, as pure blood Berkshires of similar description; and any gentleman purchasing pigs as Berkshires, other than of the color above described, may have just reason to suspect their purity. I would advise purchasers who wish first rate animals, and pay high prices, to be particularly careful in ascertaining their pedigree; even if imported, they are not secure against imposition, unless proof is afforded that they were selected by competent persons. No pig should be supposed imported, the vender of which cannot produce a bill of lading; as there is reason to believe that some, after a little travel, have been dubbed imported, that had never snuffed salt water. A little attention to these things would have a salutary effect in frustrating the attempts at imposition so frequently made, and with such detriment to the public.

Objections have been made to Berkshires on account of their supposed black rind, which is not the case after a good scald. A black scurf, or outer covering of the skin, comes off, leaving a rind not much thicker than paper, much more white and beautiful than that of any other swine.

SIZE.—Full grown Berkshires are of all sizes, from 1,000 lbs. downwards; the reason why there are so many varying sizes among those imported, is this: gentlemen in England wishing to have small ones for family use, have selected the smallest of their litters for breeding; and as the result of a well known law, have purposely procured a smaller stock. Others, preferring a larger size for market, have pursued the reverse of this course, and run their stock up to a very great size.

In the autumn of 1838, Mr. Hawes brought me one female and two male pigs, unrelated to each other, and also to those of the former importation—one from Newbury, one from Teal, and the other from Reading, all in Berkshire. These I procured expressly for a new cross; their color is the same

of the others, with points agreeing materially. In consequence of some complaint about size, Mr. Hawes selected the males from very large animals; one of these at fifteen months old, measured from end of snout to the root of the tail, six feet five inches—and girts five feet six inches in common condition; the other, two months younger, nearly the same size. I challenge the United States to produce two animals of their species and age, of any other color than what I have named, as a standard color for Berkshires, to compare with them in point of size or beauty. I am offered $200 for the oldest, by M. Beach, Esq. of Ohio. I have one sow, purchased of the Shakers at Watervliet, at $150, raised by Mr. Hawes, measuring from the end of her nose to the root of her tail, six feet ten inches, and in girth, five feet ten inches, in breeding order.

The Shakers of Watervliet slaughtered fifteen full bloods last fall—the whole number being what are called runts and cullings of litters, from fifteen to seventeen months old, and their average weight was 356 lbs. One killed at the Shaker village at Lebanon, two and a half years old, weighed 800 lbs. Mr. Shaw, of Rensselaer county, slaughtered one that weighed 556 lbs. I killed one at sixteen months, weighing over 400 lbs. I sold one to Mr. Curd of Lexington, Kentucky, which he advertises as the "Master," and which is supposed by good judges to weigh at least 1000 lbs. Mr. Beach of Ohio, informs me, that many half and three-fourths blood have been slaughtered in that state, weighing, when from seventeen to eighteen months old, from 450 to 500 lbs. Mr. Hawes informed me that it was not uncommon for them to reach from 600 to 850 lbs. in England. There is, therefore, the most conclusive evidence, that so far as regards weight, the Berkshires are all that can be desired.

Habits.—The habits of these animals are much more quiet and docile than those of the rest of the great swinish family; their native ferocity is softened down amazingly. I have never known a sow to eat her pigs, a thing that frequently occurs with other breeds; they come to maturity much sooner than the old stock, and are extremely prolific, producing from ten to fifteen at a litter, and are very certain to raise the whole. Some of my sows, and those of my neighbors, have raised twenty-five pigs per annum for years.

When two of these pigs of nearly equal size, are put together, a severe conflict immediately takes place, the result of which is final, these two never fighting again. Berkshire pigs, if fed at regular and stated periods, precisely, (and they are much more accurate chroniclers of time than most of our wooden clocks,) will finish their meals and return to their nests, where they will meditate grave as judges, and possibly as profoundly.

The Berkshires improve every breed by crossing; giving length and solidity to the little Chinese, converting that part of the belly which formerly went to lard, to firm and good pork; they give rotundity and beauty to the old razor backs, infusing unwonted life and vigor through their comparatively dry bones. The sows will often take the boar within three days after the pigs have all been removed, which should not be neglected, as a few frustrations will sometimes prevent the sow from taking the boar at all. The young Berkshire pig, I consider one of the most beautiful objects in the animal creation, as he gambols in the sun—his sleek skin distended almost to bursting, as if unable longer to form a barrier against the genial streams of life, as they course through the miniature veins, impatient to swell into the future monster; and endowed with an instinct falling but little short of reason, and in some respects far exceeding it.

Feeding.—Many valuable essays on the feeding of swine, have appeared in the columns of the Cultivator, in the past year, which are as applicable to the Berkshires as any others, so that I deem it unnecessary to say much under this head, more than that feeding should always be done with judgment, and by system. I feed them three times per day, at stated periods, which they will know to a minute—and as they expect no food between meals, they remain during these intervals perfectly quiet, they will thrive better in this way, than on twice the quantity of food given them irregularly, or in such a way as to keep them in a constant worry and expectation. My practice is to mix a large quantity of water with their food, which they drink with the food it contains, and which has the effect of making them more quiet till the next feeding.

I am decidedly opposed to high feeding for any breeding stock. I have found it very pernicious in all cases, and many times fatal, as the constitution of any animals must eventually give way to it. It is quite too much practiced on young pigs, for the laudable purpose of bringing them forward rapidly, and being afterwards discontinued, the pig is spoiled; high feeding is no way to produce or improve a breed. I shall advise to feed light, and change the dish often. A little pounded charcoal, I have found an excellent tonic or corrective of the stomach for pigs. The sun and water, are considerations indispensable in a piggery. Pigs should be fed as separately as convenience will permit, otherwise they will be all that their name implies.

Sows.—In the sow's taking the male, I never interfere with the course of nature, further than to have the litter come in at a proper season, viz: spring or fall. I have abandoned the long standing opinion, that sows never should be impregnated young, since, though the young sow may not have reached her full strength and maturity—nature, which is a great economist in this, as in all other things, will diminish the number of pigs accordingly. A sow I raised, which measured seven feet from snout to root of the tail, and was in girth six feet, had her first litter at eleven months old, and bore eight pigs. For experiment, a gentleman took two sow pigs of equal size and vigor, and of the same litter, one was impregnated at six months, the other at eighteen months, each having their regular semi-annual litters. At the end of three years, the one impregnated at six months was the largest, and by far the best milker and breeder. Besides this, a number of similar experiments have been made within my knowledge, and with similar results. Sows should be kept quiet after pregnancy, with room for exercise and air, and furnished with water, and kept separate, to prevent thrusting, crowding, or fighting. A clover pasture, where it can be had, is much preferable to the pen for breeding sows; but it should be one in which they are not liable to be worried by dogs, or other animals. They should neither be over fed or starved—for by the first course, you may lose the pigs; and by the last, you will have a swarm of cannibals, which would be about as bad. Never admit the boar to the sow while she is in a heated state from driving or worrying, but let her remain three or four hours at least, to become cool and quiet.

The Boar.—The service of the male will be equally good and efficient, and the pigs will attain the same size they would, although he may not have attained half the age and size of his stock. He should not be allowed connection with too many sows at first, or indeed never, as in this case nature will become her own executioner. Never suffer the boar to be put to a sow in a hot day, till he has been permitted to cool himself in a puddle of water, which he is sure to do, if there is one in his yard. I have known a number of instances, where neglect of this precaution has proved fatal to the boar. Not having such a reservoir in my yard, I make a practice of throwing a pail or two of water over them in hot weather. Having done this a few times, when I let the boars out, they would come and lie down to receive the water, before they would notice the sow. For any further directions respecting the management of this animal, I may refer the inquirer to the December number of volume 6th of this periodical.

I would observe, that I received in October last, per the brig Henry Bell, from Reading, Berkshire, England, for a fresh cross, two males and two sows, with colors agreeing with my former stock, entirely unconnected with each other, and also with my former breed. One boar I sent to M. Beach, Esq. Lebanon, Ohio—one of the sows, my neighbor Z. Standish, Esq. has, who also has a number of very fine breeding sows of my former stock, and will be able to supply his friends abroad with some fine specimens of the breed. There was such an increased demand for these animals last year, that I have been to considerable pains and expense in preparing for it again. Gentlemen from abroad desiring to obtain them, would do well to make an early application to me at No. 253 Washington street, Albany, N. Y.

JOHN LOSSING.

P. S.—The Shakers of Watervliet have a number of fine breeding sows, impregnated by my imported boars. Their piggery, for characteristic neatness, regularity and economy, is surpassed by none in the country. J. L.

On the Cultivation of the Sugar Beet.

Of the different species of roots for the support and sustenance of stock, the sugar beet seems destined to become the most extensively cultivated throughout North America. It is finer grained, sweeter; more delicate and agreeable to the taste than mangel wurtzel, at the same time it is more nutritious, and gives as large a yield, and is equally thrifty, hardy, and as susceptible of an extended a cultivation in the various latitudes. Fed raw, it is preferred alike by the horse, the ox, the cow, the sheep, and the hog, to every other root, with perhaps the exception of the parsnep, and cooked, it is only inferior to the most farinaceous kinds of the potato. It makes the finest of wool, the most juicy and delicate of meat, the largest quantities and richest of milk and butter in winter, not inferior to that produced from the sweetest pastures in summer. When not grown too large, it also ranks high among the table edibles; and is perhaps the most luscious and palatable of roots to the taste of man. Being then the largest of yielders, the most certain of crops, the easiest handled, secured and fed, and above all, a great ameliorator of the soil on which it is grown, we think we are not over sanguine when we assert, that in a very few years its cultivation will become so extended, as to make it the largest and most valuable of our root productions, and that it will work out for the United States, even a greater wealth and independence to the agriculturist than the growing of turneps has to England.

Of the probability of the beet rivaling the cane in the production of sugar, we shall discuss in a future number; it is sufficient in this to know, that as food for man and beast, it deserves paramount attention, and it is to be hoped that all those who have engaged in its cultivation, will endeavor to extend the knowledge and practice of it as much as possible in their respective neighborhoods. With a view of adding his mite to so desirable an object, the writer subjoins below such information as his limited experience enables him to give.

Soil and its Preparations.—The best soil for the production of the sugar beet, is a deep, light, and moderately rich loam, resting on a clay subsoil, but very large crops have been taken from thin gravels and sands, and the hardest clay; but in these cases they had undergone a potato cropping, thereby manuring the preceding year, and a slight covering of compost, ashes, plaster or lime, the spring they were planted in beets. A very rich soil, such as the deep alluvial bottoms of the west, is not so proper; the roots grow too large and rank in it, and are consequently coarser and less nutritious, and do not abound with near the saccharine matter that is found with those grown on poorer ground.

Plow deep and roll and harrow fine, and have the ground in lands of about one rod wide, with the furrows between them well hoed out, so as to drain the falling water off, especially if the subsoil be at all tenacious, as most of the western lands usually are.

The Seed and its Preparation.—The white Silesian sugar beet is the best variety, as sweetest, finest grained and growing largest. Soak the seed at least two days previous to planting, in soft tepid water, and then roll it in plaster or ashes so as to prevent its sticking together, and facilitate the sowing. It is indispensable that the seed be well soaked, otherwise, owing to its outward coating, the pericarp being very hard, it may not vegetate at all, or so late as to make a fair crop out of the question. I have frequently had it in soak a whole week, and sowed the seeds already well sprouted, and though followed by long heavy rains, they were the quickest up, and gave the largest produce. The first and second weeks in May is the most proper time to plant in this latitude; further north or south, of course later or earlier, according to climate.

Planting.—It can be sown broadcast like the turnep, but as weeds are likely to spring up in most soils and prevent its growth, and the labor of exterminating them much greater in this way, it is preferable to sow in drills. For this purpose, the drill-barrow may be used the same as in planting the ruta baga, but the beet seed is much more difficult to deliver evenly through a small aperture than the turneps, and though I have used a great variety of barrows for this purpose, I have never yet had one that worked well and could be depended upon, especially in tenacious or heavy loamy soils. It is preferable, therefore, to take a piece of joice four inches square, or a round stick of the same diameter half or just as long as the lands are wide, fill this with iron or wooden teeth in wedge shape, as far apart as you wish to have the rows, put a pair of fills to this, and hitch on a stout man or steady horse, and once or twice going through the land, completely drills it from one to two inches deep. Then follow immediately with the seed, dropping it by hand, or from a long necked bottle, or tin cup with a hole in the bottom, and a stick handle attached to it, shaking the cup or bottle as you walk along, and following sharp with the eye to see that the seeds are evenly dropped. Faithful children of ten years old, can do this with more ease and facility than grown persons. As fast as dropped, cover with the hoe; in heavy soils about half to three-fourths of an inch deep, in sand or light gravel twice this depth.

The rows may be from one to three feet apart for a field crop—two and a half to three feet is the best. This distance enables one to use the cultivator for weeding, without danger of cutting or covering the plants by the dirt being thrown up as it passes through the rows. The product is not so great per acre from wide rows, but land being cheap and labor dear in America, we must study to facilitate manual operations, at the same time that we have some calculation to a good yield. Four pounds of seed per acre is generally considered enough, but it is better to have a dozen extra plants to thin out, than to be obliged to transplant one. Those transplanted do not thrive half as well as those that remain where they vegetate; besides, the labor of so doing is more expensive than extra seed and time of thinning. I therefore mean in sowing to have a good seed dropped as near as every two or three inches in the drills.

After Culture.—As soon as the weeds begin to appear, run the cultivator through the row and follow with the hoe. It is very essential that the ground be kept clear of weeds, especially for the two first months, and three hoeings with the use of the cultivator is generally sufficient for the season. As the plants attain a height of about three inches, they should be thinned to a distance of about four inches, leaving the strongest and healthiest, then during the season as they grow, gradually thin out the remainder, leaving the roots in the rows at least about nine or ten inches apart. If left too thick, they shade and choke each other in growth, and the product is not so great as when well thinned. These thinnings are valuable to feed to stock during the summer, and are frequently considered equal to half the expense of cultivation of the whole crop.

Harvesting.—Chaptal decides, when the leaves being to decay and turn yellow, is the best time to gather the beets, for if left longer than this in the ground, the roots grow hard and strong and do not yield so great a per cent of saccharine. This of course will take place earlier or later in different climates, and is undoubtedly as good a rule as can be given, it being adopted after a strict chemical analysis of the beet in its growth by that eminent agriculturist. If the soil be light, as the roots generally grow so much out of the ground, they can be pulled up by taking hold of the tops with the hand—but if more tenacious, the dung-fork is the best instrument that I know of for digging them up. Let part of the hands be at this operation, and the other part follow with large knives or bill hooks; taking up the root with one hand, top off the leaves with the other, and toss the roots into small heaps to dry through the day, and if left out over night and there be danger of frost, let them be lightly covered over with leaves or straw; a hard frost injures the roots and makes them more liable to decay. They may then be taken to a well ventilated cellar, or be pitted in heaps of 100 to 200 bushels. The beet is rather apt to heat and commence sprouting if thrown into large heaps, or packed away in the cellar. If put in the latter place, any other roots except the turnep may be placed at the bottom, and the beets on top, and if in pits the same roots or straw in the center. All the beets then have a good ventilation, and an opportunity of throwing off the impure air; and to facilitate this, after covering the heaps with dirt, holes should be made every few feet on the top of them, and wisps of straw be placed in such holes. In this way the writer has experienced no loss or deterioration in the value of the root, but has preserved them till May, as fresh, sound and sweet as when first taken from the ground the preceding fall. In a climate as mild as south Ohio, they might be preserved all winter in tolerable tight sheds and barns.

Feeding.—Throw them on to the ground or floor, and take a hay knife or spade, and a man will slice up a bushel a minute sufficiently fine to prevent cattle choaking on them. The best way to cook them for stock is by steaming, but they cannot be kept so over two days in warm weather and a week in cold, without undergoing a fermentation, and losing the saccharine matter so grateful to the taste and so essential to nutriment. Either raw or cooked, my stock frequently prefer them to meal or corn. Raw, I think them as nutritious as any root whatever, and as far as my limited experience extends, three bushels of beets with neat stock, is equal to one of Indian meal. Hogs demand less bulk to fill themselves than cattle, and perhaps their value to them would be about as four to one.

Product.—Four hundred bushels is a fair yield in field culture, but six and eight hundred per acre is about as common. The writer grew at the rate of 1,150 bushels to the acre the past year on a hard clay soil, and his average field product was about 600 bushels on the same soil. He has heard of 3,000 bushels being produced to the acre on rich loams. Several of my roots the past season weighed 16 lbs. each, and 10 lbs. is not unfrequent; now admitting this last weight to each root, and that seven rows stood in the width of a rod, which would make them about two feet apart and the roots one foot apart in the rows, and allow 60 lbs. to the bushel, we should have the enormous product of 3,080 bushels to the acre: but roots so large are coarse, stringy and not unfrequently hollow and have much less saccharine in proportion to their bulk, than smaller ones. Those of about 5 lbs. weight are far superior; and these standing one foot apart in the rows and five rows in the width of a rod, making them about three feet apart, gives the large yield of 1,100 bushels per acre, which is quite as great a product as it is desirable to strive for, and upon the whole perhaps the most profitable.

I see by most writers on beet cultivation, that the leaves are considered highly nutritious, and are recommended to be cut and fed to stock. I suspect that persons thus writing had more theory than experience upon the subject, when they made such recommendations. I have universally found that they badly scoured all kinds of animals, even when taken up from green pasture to feed on them, and if persisted in, created disease. I have tried all sorts of ways to prevent their scouring, by salting the leaves and mixing them with other food, but the result was the same. They have a sweetish bitter pungent taste, and I found upon chewing the leaves, that the effect on man was the same as on beast. I know of no better use for them than to be left on the ground to fertilize and assist in giving it heart for another crop. But it will be seen that the roots alone make it a very valuable crop, far more so than corn, or any of the smaller grains. The estimated cost of producing it, ranges from three to eight cents per bushel; the average is probably five to six cents.

Range of Latitude for Cultivation.—In North America, as high as 45° may be considered as one extreme for a profitable crop, but as to southern limits, I should essay it as an experiment, as far south as 30°. But in this low latitude it ought to be planted as early as the 20th February to 10th March, on a cool and rather moist soil, for the purpose of being pulled and fed green at the beginning of summer drouth. Perhaps it would do well to plant between corn, making the rows a foot or two wider apart for the purpose of receiving the beet. The tall stalk would thus shade it from the excessive heat of the sun, and somewhat check its more rapid growth, and possibly tend to make it last longer through the summer. Should the beet succeed so far south, in this way it would prove a great assistance to stock growers getting through those months in which pasture, except in the woodlands, is so completely scorched up by the hot rays of the sun. I would respectfully recommend a thorough trial of it to the planter; it certainly may succeed as far south as Kentucky and North Tennessee and Missouri. I know men in an hour will gather a sufficient quantity in wagon for a large stock. It may be thus transported from the field where it grows to that where it is to be consumed, and scattered round in the same way that corn is now fed at the southwest to cattle and hogs. I thus kept a large herd of hogs through September and October last year.

Raising the Seed.—There is as much in choosing proper roots for this purpose, as in selecting animals to breed from, and the same general rule holds good in both cases—a medium size and fine true form. Roots weighing four to six pounds and of four to six inches diameter at the top and nine to thirteen inches long, and smoothly and evenly tapering to a point, without straggling branches, and of a creamy white color and smooth grain, are the most desirable. "Like produces like," and with such selections followed up, the crop will soon run evenly of the same shape and size as the roots from which was grown the seed. Plant the seed roots, and in this latitude about the 1st of May, three feet apart; and as the stalks grow, stake round them in a circle and tie a small cord from stake to stake, for their support. When the seed shells easily, which if planted in May, will be in September, is the time to gather it. Two or three dozen roots will grow seed enough for acres, and at one-tenth the cost usually asked for it at the seed stores. When grown at home, one knows what he gets, and as it comes to him abundantly and cheap, he can without grudging give to his neighbors, and thereby greater promote the culture of this most valuable of roots.

A. B. ALLEN.

Buffalo, March, 1840.

"REPORT ON THE CULTURE OF SILK."

"BY CHARLES F. DURANT."

Gentlemen Editors—The report under the above title, published in your last Cultivator, will doubtless be regarded as an important communication to the public. Certainly all correct information upon the culture of silk in this country, will be readily appreciated at the present time, when so many are investing property in its culture. Misrepresentations can confer no benefit upon the public, and should therefore not intentionally be made; or if made, should be speedily corrected. As one of your correspondents, I could not but be surprised that your well sustained paper should have admitted upon its pages, a communication which ventures to trifle so much with the public interest, and to send forth so much of the product of the imagination, instead of plain matters of *fact*. We need facts, which we can never obtain from a writer who seems as much intent on a high sounding *Report* as on an exhibition of truth. After having sent abroad Mr. Durant's Report, surely you will feel that if the public, or a respectable portion of the public, regard it as an injurious representation of the business in which they are lawfully engaged, they have a claim to your columns in a few words of self-defence. It is the object of this reply to disabuse the public from the effects of a declamatory misrepresentation. And as truth is my object, you will permit me to present, before I close, a word of correction on your note.

I find nothing very objectionable in the first part of Mr. Durant's Report, till he comes to what he sarcastically calls the "*Silk Business*," when he loses the cool temper of an inquirer after truth, and, regardless of consequences, declaims in a most glaring (though incorrect) description of the tree business. Now it is obvious that all the misrepresentations of Mulberry trees given to the public within a few years past, are just as cordially to be deprecated, as is Mr. Durant's Report, so far as it is not sober truth. Misrepresentations for or against a thing, are equally unjustifiable; though I would rather *encourage* enterprise than *discourage* it.

In reporting against the public excitement on the subject, he says, "The *Morus alba* (common white mulberry) universally esteemed one of the best for feeding silk worms, could not be sold for one cent," &c. It is *not universally admitted* that the white mulberry is "one of the *best*." Its leaves, when obtained, are not objectionable. But there is a variety, and I may in truth say more than one, whose leaves, for *kind*, are as good, and for quantity, far more abundant; and the tree is as hardy. Of this fact Mr. D. is ignorant; for we could not suppose that he would intentionally deny it, if he knew it. I am persuaded that he has some things yet to learn. Nor will he admit any assertion on experience as good evidence of the fact. His own must be his criterion.

Mr. Durant also makes this broad assertion: "So extravagant were the estimates of the profit, that, for each thousand dollars in multicaulis last spring, even at the then high prices, it was generally supposed that fifty thousand dollars could be realized by the sale of the increased buds in the autumn of 1839." Did Mr. D. suppose that in this paragraph, he was reporting truth? Does he not know that there is no truth in saying "*it was generally supposed* that *fifty thousand* dollars would be realized," as the profits of one thousand dollars' investment? Did one person in ten thousand ever suppose this? Why then slander the public? *Tenfold* is a great yield for a thousand trees; and few, if any, really supposed that the *prices* could advance from what they were last spring. Call this a flourish, yet it deeply affects the interest of the community. It is nothing short of exaggeration, employed seemingly for the purpose of bringing into disrepute, all that has recently been done to encourage the culture of silk; unless the report would except what has been done with white mulberry trees.

Admitting that Chinese mulberry trees have been extolled beyond their value; does this afford a reason why every one should disparage them below their value? What choice is there worthy of attention, in misrepresentations? If Mr. Durant prefers the Morus alba to some kinds which he may never have seen, at least tested, why should he indulge himself to speak contemptuously of all the other kinds. Even if other kinds were not so good, (which is not a fact,) justice should give them all the credit which they merit. Is it fellow-feeling and good will, that would kick the silk business down hill, while he presumes to prove that it already declines, at least where most was to be expected? Is it good or ill will that represents nearly all the silk culturists in America as "bankrupts," without assigning any reason for it, while reasons may exist, which if made known, would present no valid objection against the silk culture? Did Mr. D. state the whole truth, or keep a part from sight to carry a purpose into effect? After having announced the failure of several noted establishments, he says, "the legitimate silk culture, like some bright star in a troubled atmosphere, has moved steadily onward." What is meant by this, probably we are to learn from a future number of the Cultivator. And probably, he means the culture of silk, as in Mansfield and Ashford. I am not so far from these places as not to know something on the subject. Mansfield now has a variety of the mulberry besides the white, which, if duly cultivated, will lessen the expense of making silk fifty per cent from their past experience. And with their former trees, good farmers testify that they derived more profit from their silk than they can by cultivating their farms in any other way. And if so, why may they not avail themselves of trees that will produce more than twice the quantity of foliage of equal quality? Why should we willingly discourage any improvement which may be made in the tree? I fear that envy has prevailed as much as benevolence ought, in some communications made to the public. Give every tree, every business and every man their due, and we ask no more. Is it incredible that by request, one of the Chinese Missionaries, Mr. Bridgman, should obtain seed of the most approved three in China and send it to this country, and that this should produce a noble tree, rapid in its growth and hardy in its nature, being acclimated to a northern temperature, and most abundant in its foliage? Why should this fact be incredible? Or if admitted, what lover of his country would willingly ridicule its growth?

Messrs. Editors, in a note subscribed to the above named report, you very justly defend the multicaulis from contempt. And after saying that none of the "tropical varieties" will endure our northern winters, you claim that the main question now is, to silk growers, "which will produce the earliest foliage in greatest quantities from trees planted in the spring, as all these varieties must be." Here, gentlemen, you assume too much in saying that all these varieties *must be* planted in the spring. I have now some fifty Canton trees which are in good condition where they grew last summer. They seem to have received but little injury from the winter, though the cold has been more intense than we have known for 20 years; the mercury having stood 26 degrees below zero. I have also found trees which were dropped on the ground last October, and have lain exposed to all weather possible since, and are now apparently in good heart. The above named trees have had no artificial protection. I have other evidence than this that *they are as hardy as the white mulberry in the same circumstances.*

You are also under a mistake in supposing that no variety but the multicaulis, planted in the spring, will afford foliage for feeding the same season. Believe me, gentlemen, you can have all the evidence you wish from this town, that the Canton tree planted in the spring, will outstrip the multicaulis, side by side, and be as soon or sooner ready to afford foliage equal in weight and superior far in apparent texture. I used both the white and Canton, and I testify that I have no evidence that the leaf of the Canton is at all inferior to that of the white, while it is four times as large. I made silk that will bear the test even of envy, exclusively from the Canton planted last spring in seedlings. I could have made many pounds, had I not been desirous to have the public behold the beauty and splendor of this variety. One tree from a seedling *bud*, grew seven feet high, and possessed lateral branches enough to make upwards of forty feet of growth. There are many eye-witnesses of this tree. While the leaves fall a little short of those of the multicaulis in size, they exceed them in thickness. The tree strikes its roots deeply into the earth and spreads widely around; thus it is guarded against winds and cold. On the above description you may rely.

R. T.

Eastford, (Ct.) March 3, 1840.

RUTA BAGA INJURIOUS TO MILK.

Messrs. Editors—I see it stated in the January number of the Cultivator, in an extract from Governor Hill's Address, that the feeding of ruta bagas to milch cows, will not hurt their milk. My experience differs from this. When I commenced feeding my milch cows with turneps, they entirely changed the flavor of the milk and the butter, so much so as to render them unfit for use. On changing the food, the milk assumed its naturally sweet flavor.

J. W. POINIER.

Morristown. N. J. Feb. 1840.

TO THE AMATEUR FARMERS OF WESTERN NEW-YORK.

In addressing you on a subject which I consider of vital importance to our agricultural prosperity, a few preliminary remarks may be proper. It is unquestionably true, that for many years to come, the great object of attention in our country must be active productive labor; probably, until the end of time, every department of society must depend on those who till the soil—and it is a palpable misnomer which designates so large a portion of mankind as "the laboring poor." No man is poor because he labors; on the contrary, he alone is rich. If the time shall ever arrive, when by the force of circumstances or legal enactments, men produce nothing more than their own necessities require, the absurdity of calling the laborers the "poor," will be abundantly manifest. It will then be seen, that they are the only rich men, and that all the unproductive classes, are literally dependent upon their bounty, and fed with the crumbs from their table. It is the great mass of mankind having a common conditon, that is thus distinguished by the epithet "poor." In this country, particularly, there are *few* that can be called *rich*; and if, as an eloquent statesman has said, these were all hung at the lamp-post, and their property equally divided among those who labor, it would scarcely buy them a supper. Nothing therefore can be more base than the canting whine of, "the laboring poor." It arises from a total want of thought, and is calculated only to revive the factions of the middle ages—the bitter animosities of the Guelphs and Ghibelines. The rich are only the managers and trustees of the poor, because to make the property of the rich available, he must return it in one shape or other to the productive classes; when, therefore, the poor make war upon the rich, they are destroying their own trustees, their own property, and act as wisely as when they burn haystacks, throw the contents of granaries into the river, or scatter streets with flour, which, made into bread, would keep them from starving. Whatever may be the disposition of the rich to perform *their* duties to society—such is the organization of the social compact, that, willing or unwilling, they must perform the trust nature confides to them, and if done fraudulently or negligently, a change speedily takes place, and the *trust* becomes the trustee.

The question, what enables professional or wealthy men, the unproductive members of society, to maintain their ascendency over the community? is an important one. Is it any thing but their superior intelligence and education? Let any one of them lose caste, by neglecting these things, and then place one of each class side by side, under circumstances that require the development of mental and physical energy, and a single day determines their relative eminence and rank. The increased wealth of a country is generally in proportion to its increased intelligence; they are mutual correlatives, and hence the conclusion is inevitable, that the means of education and intelligence should be of the most liberal kind. Among the narrow minded opulent, the opinion prevails to some extent, that to maintain their supposed pre-eminence, they must bind down in ignorance the understanding of the many; they oppose and ridicule every effort made to enlighten the farmer upon his social position; they find large numbers ready to join the senseless cry against "book farming;" they excite the tiller of the soil to march under the Cimmerian banner of "no agricultural schools;" they teach him that he is already perfect in his business, and that it consists in industry alone; that because the plow has been used from the remotest antiquity, it is not susceptible of improvement; and that farmers are either above, or perhaps below, the care of government.

All other branches of industry require the fostering care of the legislature of the nation; but the country is not satisfied with the *laissez nous faire* as it regards farmers; it puts upon them the shackles of ignorance—it marks them as culprits. Such legislatures may have much knowledge of political arithmetic, but I doubt their having studied the theory of moral proportions—the rule of three in matters of policy and interest; and what is more surprising, there is no example to justify this treatment of the farmer in the conduct of any other civilized government or country. Look at England. All the great and noble of the land embarked in the promotion and extension of agriculture. See under the patronage of government her professors of agriculture in her universities: Look at France, with no less than fifteen agricultural institutes: See the autocrat of Russia, sending agents into every part of Europe, to ascertain the best systems, and introducing them into his empire: See Sweden and Denwark, with professorships intended exclusively for the benefit of the farmer: Look at Prussia, making it the study, that in the primary schools follows reading, writing, and arithmetic: and even wretched, bigotted, prejudiced Spain, overcoming her religious predilections, and inviting from Sweden a professor of agriculture. After surveying these, and even Egypt and China, let us turn to the only republic on earth, one that swells like the frog in the fable, with its own pretensions to wisdom, and is not the contrast, warm as is the attachment to liberty, almost enough to make a monarchist of every farmer. Yet the farmer is courted as the main bulwark of freedom; one who is to anticipate every danger to our institutions; and who is to snuff the approach of tyranny in the scented gale; while he is treated, as the crafty trader treats the untutored Indian, giving him beads for his lands, and baubles for his gold.

I have not forgotten the men I am addressing, nor the chief object of these remarks. Commerce and manufactures; the advantages of the steam engine; the discoveries of science, and the inventions of mechanical genius, have gradually produced numbers of wealthy men, (of whom you constitute no trifling proportion,) who from the very organization of our constitutions, must be kept occupied, or become worse than useless. If a man has no motive to industry, he is cut off from all the elements of happiness; and the father who remembers the struggles he made in early life to raise himself to affluence, should also be aware, that by the accumulation of wealth, he has taken from his son the motive for exertion, and that he has placed him in a situation of danger, one in which he will be liable to mistake the difference between a life of leisure and a life of indolence. He wonders that his son is not disposed to pursue the acquisition of wealth as he has done; and consents to let him vary the monotony of existence, by entering upon an already overstocked professional career; he has no motive to exertion—and as the author of Modern Chivalry observes, considers his pro-

fession as a "means of making his fortune, by the mere blowing of his breath." Such individuals too often sink into apathy and uselessness, and experience the truth of the maxim, that the possession of wealth is not the attainment of happiness: Let us then endeavor, while yet the objects of our affections surround our table, to impress upon their mind the truth of the proverb, "that wisdom is better than gold;" that the study of nature, so easily associated with rural occupations, can only be pursued to advantage when a man is raised above the privations of bodily want.

But to fully enable you to accomplish these desirable things, you must have schools of agricultural, horticultural, and floricultural science, where you may place your children, and where thorough instruction in all that appertains to so honorable a career may be obtained We may then anticipate the pleasure of seeing the inheritors of paternal wealth, less frequently the inmates of the castle of indolence—less frequently at the bar of the tavern, or the gin-shop—less frequently lounging away the best period of existence in aquiring habits of listlessness and vice, more disgraceful than tattered garments, and more dishonorable than beggary produced by unmerited poverty. There is probably no part of the American states, so soon destined by the bounty of nature to exhibit a system of ornamental farming and rural embellishment, as the section of country in which you have selected a residence; there is none exhibiting more native magnificence, than the country so emphatically distinguished in other parts of America, as the Lake Country. The grandeur of her water-falls, the beauty of her landscapes, the fertility of her soil, all unite to furnish an outline that the taste of Shenstone could never have designed, but which a few such men would fill with beauties that greatly increase the value of our earthly inheritance, delightfully change its aspect, and multiply its attractions and enjoyments.

From you, whose pursuits are *con amore*, who love agriculture for its own sake, and for the sake of your species; from you, whose special delight it is,

'With flowers and fruit to crown Altheas' horn,"

we must look for the anticipated change. It is idle to wait the slow and reluctant action of legislatures; a few individuals can accomplish more in a season, than apathetic rulers in an age. The establishment of a college, with sufficient endowments may be accomplished. Pestalozzi, Fellenberg, Oberlin, are instances of what well directed individual efforts can accomplish, and the difficulties perseverance can surmount. I am well aware of all the difficulties, and believe they will not exceed those attending the establishment of any other boarding school; and roses never grew without thorns, except in Milton's Paradise. The credit of a commencement will be a garland of well earned fame; and if you will not take as much interest as this in the education of your children, who is there that will? If you drive them into other professions, or what is the same thing, withhold the means of dignifying and ennobling their own, you alone must take the responsibility. With half the advantages that professional men possess, their active energies would soon produce a modification of claims; the privileges now gratuitously conferred upon intellectual superiority, would yield to the combination of more equal opulence, and more robust philosophy. While learning and intelligence would be encouraged to retain their natural supremacy over the intellect, wealthy young men would have a new starting post deeply fixed, in our sensibility to reputation—in an ardent desire to triumph in elegant pursuits—and a double title to distinction would be advanced by the connexion of intelligence and prosperity. A more rational regard to public, rather than private aggrandizement, would soon prevail, and thus the *amor patria*, instead of being extinguished by slavish toil, or indolent sensuality, would spread her broad ægis over public spirit and private virtue.

That some such institution is needed for your children, it requires no argument to demonstrate. We are all alive to the advantages of instruction, and even agricultural instruction, so long neglected in schools, has become an object of attention and care. In this respect, the poor man is far in advance of the rich. Common schools have started up in every corner of *the land*—but where are the institutions of the rich? Except for lawyers, doctors, and students of divinity, where is there a single institute that the understanding and heart of a young man of affluence and intelligence, who has passed his grammar and geography, can rejoice to enter and finish his education? Where is it that science unfolds to him "her ample page, rich with the spoils of time?" He feels that among the professions, there is "no goodlier form, no mind of nobler grasp;" but he sees no prospect, apart from them, of being elevated above the level of continued labor—no distinction, but that afforded by excelling his companions in wasting toil. Agriculture he loves—the volume of nature he delights to read, but he finds no one to instruct him in both, and direct aright the inquiring mind. He is at last driven to some unpleasant, if not disgusting business; he enters one of the professions; tastes of Circes' enchanted cup; and too often sinks into inertness, insignificance or hopelessness; an object of commisseration, rather than of pride.

EVELYN.

USEFUL HINTS TO PRAIRIE EMIGRANTS.

Messrs. Gaylord & Tucker—Having never seen any directions in the agricultural journals, to guide the emigrant's operations in his first efforts at prairie farming; and having seen and experienced the difficulties arising for the want of information on the subject; I take this method of offering a few hints, which may be of service to those who intend to make their home in the western prairie.

Never plow up the prairie for the first time, until the grass has generally started—which in the latitude of northern Illinois, will not often be sooner than the twenty-fifth of April. It possible, finish plowing for the season by the first of July; at all events, plow none after the 15th July. The consequence of plowing the priarie after that time is, that the sod does not rot that season, or even the next; but will cut up in cross plowing into square clods, which cannot easily be pulverized, and even after they are made fine, the land is heavy, sour, and unproductive for two or three years. The consequence of early plowing, is, that the grass will grow up through the sod, and prevent the decomposition of the innumerable fine wiry roots, of which the sod appears to be almost entirely composed—by sowing on oats, this may be partially obviated. From the 20th May to the 20th June, is the best part of the season for breaking prairie.

With a plow rightly constructed, a pair of horses will easily plow an acre a day. An experienced hand, with four yoke of cattle, will break two acres a day. A team of oxen is generally considered most profitable, as they will obtain their whole living on the prairie during the summer season.

A furrow, turned two inches thick, is better than if it were four or six inches—the thinner the furrow, the better it rots. In cross plowing, a pair of horses will plow as deep as is necessary, without the inconvenience of having the plow clog or choke with sod, as it will when the first plowing has been deep.

To a family, a garden is of the first importance—for the reason of the sods being so tough, many do without one the first season. If a hazel "patch" can be found, clear off the brush, and plow it up; the soil will be found as loose, warm, and productive the first year as ever after.

Vines of all kinds, do well on the sod. If the season is not too dry, a tolerable crop of corn, oats, and potatoes may be made on the sod, or rather they will make themselves; as little can be done in cultivating a sod crop, save plowing in the seed.

In selecting farms, the rolling prairie is generally preferred by eastern emigrants.

On such lands, the water is always good and generally durable, and a surplus quickly drains off.

The rolling prairies are generally the most healthy. Indeed on the ridge of land which rises abruptly from the bottoms of the Illinois, near Hennepin, and shoot off with gentle undulations nearly to the Mississippi, I have scarcely heard of a case of bilious fever, or ague and fever, during the three years that I have been a resident of this section of country; and where there have cases occurred, the cause could be traced to the unwise location of their dwelling. This is something that should not be disregarded. Care should be taken that the dwelling-house is not set near large sloughs or ponds, in ravines, or in the borders of heavy timber.

Very respectfully,
A SUBSCRIBER.

Providence, Bureau co. Illinois, Feb. 1840.

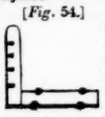
ON THE CULTURE OF LUCERNE.

Respected Friend, Jesse Buel.—I some time since received a letter from thy father, requesting me to give him such information as I am possessed of, respecting the culture of Lucerne; and thinking thou would like to have it, I have concluded to send it to thee, as I think every farmer who has land suitable for it, ought to have plenty of this valuable grass. It requires a good deep soil, that has not clay bottom. I have succeeded beyond my expectation, and now find no more difficulty in raising it than any other crop. In order to prepare the land for it, spread plenty of unfermented manure on it, and plow it in and plant corn, which ought to be well managed, allowing no weeds to grow. After the corn is taken off, give it a good deep plowing, and let it remain in that state until spring, if to be sown with barley; but if with winter wheat, harrow it well, and collect the roots and loose stones, and should there be any fast stones, they ought to be removed; then spread about forty bushels of ground bones per acre, and harrow it in; but if bones are not to be obtained, any good rotten manure that has no seeds of weeds in it will answer. And as it is best to lay the land in ridges about 24 feet wide, open a furrow about 12 feet from the fence, and let the near horse return in it; then open another in the same manner, 24 feet from it, and so continue until the whole is finished; then sow the wheat and plow it in, not very deep, filling the furrows which were opened, and harrow it once over. As it is best to have it as smooth as may be, I made a hone with a plank about nine feet long, and two poles, pretty much the shape as those we smooth our roads with; and if it is not heavy enough, lay a post or two on it. It ought to be so constructed as to draw the loose earth towards the furrows. In the spring, about the time clover seed is sown, sow about twenty pounds of Lucerne seed to the acre, and harrow it in with a sharp, heavy, iron toothed harrow twice over, once each way, and roll it with a light roller, across the ridges, to be drawn by one horse. After the grain is taken off, let it remain in that state (not pastured) until spring. Soon after the frost is out of the ground, before it is much settled, harrow it once each way with the heavy harrow. I had mine pointed with steel. The harrow ought to be made in two parts; and hung together with hooks and eyes; then it can readily be lifted up on one side by the driver, and cleared by a boy to accompany him with a rake. It may be harrowed three or four times over after every mowing, remembering to pick up the loose stones. The reason I recommended laying it in ridges, is because it can be more readily smoothed with the hone. If it is not smoothed, the harrow will not have the desired effect; and the natural grasses are apt to get in. I generally let mine stand until in blossom, when it is designed for hay. I usually get three good crops, and think the hay is better for all kinds of stock, than any I have ever seen. My first crop has sometimes been so large, that it is best to cut it rather earlier, as it will sometimes lodge, and may injure the roots

As this grass requires more time to cure than some others, I thought it might be well to inform thee how I manage it. That which is cut in the forenoon, if the sun shines, may be turned with a rake towards evening, but not opened; and that which is cut in the afternoon may remain until the next afternoon, before turning it. That which was first turned ought to be turned the next forenoon, and put in cocks early in the afternoon, and let it remain two nights in cocks: then open it and lay the fork fulls separate, shaking it well, and if it does not appear to be sufficiently cured after being turned, put it up in cocks and let it remain one night more. When the hay is housed, I generally put half a bushel of salt to a load—say to about fifteen hundred.

As this grass, especially the first crop, is apt to be very large, it is liable to be injured by heavy rains when in cock. I would therefore recommend to those who raise it, to get a quantity of low priced, yard wide linen cloth and give it a thin covering with boiled tar, with a painter's brush on both sides, and sift some fine sand on it while warm; and when dry, cut it in squares and fasten a small stone to each corner to prevent their blowing off the cocks. These cloths cost but little, and with care will last many years, and may be very useful for other kinds of hay; for want of them, one of my neighbors had a large quantity of clover hay much injured.

[*Fig.* 54.]



The machine to be fastened to the harrow by which it is drawn, ought to be made like the drawing, (Fig. 54) with notches in it, to regulate the height, about eight inches high; then the harrow will run much more steady, and is not so liable to injure the crop.

When the swaths are turned the second time, let two be turned towards each other, then when it is raked, the horse can walk between them and let a boy keep by the side of the horse, and when the rake is full, let him open the swaths with a fork, that the rake may readily enter.

I have been thus particular, being desirous that whoever may wish to raise this grass, may succeed as a number of my friends have been disappointed for want of proper management.

Thy assured friend,
JAMES BYRD.

P. S. If the seed is sown on winter wheat in the spring, it ought to be done when the ground is neither too wet nor too dry, but when it will crumble.

Flushing, 2d mo. 19th, 1840.

CHINA TREE CORN.

Great complaints have been made in the eastern states, as well as the north and western part of this state, respecting the "Chinese Tree Corn," and not without some cause. In general it has proved a failure; although in some instances, it has ripened and produced well. In this county, in the town of New-Scotland, I am informed that a farmer, (his name I do not now recollect) planted one ear of this corn last season, from which he harvested six bushels of good sound ears. A farmer in Oneida county had a very good crop. I am also advised that Judge Spencer, in Wayne county, was equaly successful. The favorable results of the above crops, I presume can be accounted for by being in favorable locations, with extraordinary manuring and attention.

In the vicinity of New-York, on Long-Island, and in New-Jersey, it has, with one or two exceptions, succeeded well, and produced abundantly. I have my doubts, however, whether it will, even in that section, ever prove superior or equal to several other varieties which have been cultivated there.

Of all classes, the farmer is the most wary and slow in adopting new things, such as new modes of culture—new fashioned implements—new variety of seeds, or new breeds of animals; and when adopted, if a failure takes place, or he thinks he has been deceived, he is not backward in making complaints; and well he may, as regards seeds, for a failure cannot generally be remedied—the season has passed.

Now, I have the charity to believe that Mr. Grant Thorburn never intended to deceive any one with his corn; but that he supposed he had not only obtained a *new variety*, but a very *prolific* and *early* corn. It appears to me very strange that any person would be willing to sacrifice his veracity for the petty sum which he would obtain from the sale of corn grown on "two hundred hills!!"

And after all, what does it amount to? Very few purchased or planted more than one ear, which cost twenty-five cents! It was an experiment, and in most cases a failure. Let it go, and pocket the loss; but probably the stalks were worth the seed, and then the only loss would be the labor and use of the land. I have heard of no person that planted any great quantity; of course no person has been obliged to mortgage his farm in consequence. Neither have I heard of any failures, on account of the loss of a crop of "Chinese Tree Corn."

On referring to Mr. G. Thorburn's account of the "Chinese Corn," as published in the Cultivator of November, 1838, I cannot discover that he recommends it very highly; he merely tells what it produced on his farm at Hallet's Cove. He does not say that it is suitable for an eastern or northern climate. He designates where the corn may be procured, and the price. Possibly his enthusiasm may have urged him on too fast—prudence would dictate another trial before he made it public.

Some three or four years since, the "Baden Corn" was spoken highly of, as being very prolific—having from six to eight ears on each stalk. I procured some, and planted it on a rich soil, in a favorable situation. It grew very luxuriantly and about fourteen feet high; on the first of October, I could, with the aid of a spy glass, discover some indications of the sitting of the ears, say from three to five on a stalk. This was a failure, but I did not charge the seedsman with fraud or an attempt to deceive. It was a southern variety, and would not mature so far north, unless in a favorable season, and protected by buildings.

Much dissatisfaction has also been manifested in regard to the Whitington Wheat, which has proved in this country to be a *winter* instead of a *spring* variety. The failure of this cannot be charged to Mr. Thorburn, for he sold it as he did the Chinese Corn, in good faith, from what was said of it in the London Farmer's Magazine. There it was advertised as the "*Whitington New White Wheat*, for winter or *spring* sowing, which obtained a medal at the Liverpool Agricultural Meeting in 1836." For farther information on this subject, I would beg leave to refer to the communication of Wm. Thorburn, in the August number of the Cultivator, and of George C. Thorburn, in another part of this paper.

The foregoing remarks were suggested on hearing some farmers complaining to Mr. William Thorburn, seedsman in Albany, charging him with deceiving them in the sale of the Chinese Corn and Whitington Wheat. They did not deny but that both vegetated and grew finely, but did not mature. Nor did they seem to understand that he was the *seller* and not the *grower* of the seeds. But what pleased me most, was to hear him offer to refund them the money that they had paid him for the corn, which they refused, but took the amount in seeds; thereby acknowledging their confidence in him, and went of well satisfied. I heard him also say that he would refund to all who purchased of him, if they would call for it. The reputation of a seedsman is dear to him—it is a part of his capital. Confidence is every thing; where that is destroyed, farewell to business

I have been informed that some have objected to subscribe for the Cultivator, supposing Mr. Thorburn was a proprietor—to such I would say, that he is not now, nor ever has had any interest in the Cultivator, except as a gratuitous agent for obtaining subscribers.

C. N. BEMENT.

Three-Hills Farm, March, 1840.

COTSWOLD SHEEP.

MESSRS. GAYLORD & TUCKER—I cannot leave this place without giving you some description of six Cotswold wether sheep, bred and fed by Mr. Dunn, of this place, and exhibited in this market by Mr. Kirkpatrick, on the 22d of February. I regret very much I did not arrive early enough to view the whole of them, as the sight must have been gratifying to a practical man, and not only to him but to every consumer, as they could go home, and rest satisfied that food and raiment can be procured, as long as such animals are looked to with considerate care by the breeders, (be the times as hard as they may.)

I need not say much in praise of Mr. Dunn's management, and the gratitude due to him from an enlightened public, as occular proof would have a better effect. Allow me to invite the enterprising farmer to examine for himself, and if it does not spur him on to obtain that breed, and pursue a similar course—my views are not so valuable as I might represent.

I will give you a statement, with reference to the whole inhabitants of Albany.

Mr. Kirkpatrick, the person who purchased them, says, the heaviest sheep weighed 210 lbs. and the fat on the ribs measured 5¼ inches. I saw the smallest—the thickness of fat from my own measurement, was 4¼ inches—the price $22 each; and the meat sold in the market rapidly for 12¼ cents per pound. Mr. McLaughlan, of Montgomery county, bought a whole carcase, at that price, to show the farmers in his neighborhood. The fleeces from these sheep averaged about 10 lbs. each. These are facts from the breeder and butcher, without diminution or addition. Should it call the attention of the farmer to any benefit, it will be a satisfaction. I am, dear sir, yours truly,

WM. H. SOTHAM.

P. S.—Perhaps it will be as well to observe, that these lambs were not thought sufficiently good to reserve for breeders, and were the culls of his males.

Albany, Feb. 27th, 1840.

Timber—Proper Time for Cutting, &c.

Timber includes all kinds of felled and seasoned woods. Of all the different kinds known, oak is considered the best for building, and even when it lies exposed to air and water, there is none equal to it. The goodness of timber not only depends on the soil and situation in which it stands, but likewise on the season in which it is felled. People disagree very much in this: some are for having it felled as soon as the fruit is ripe; others, in the spring, and many in the autumn. As the sap and moisture of timber is certainly the cause that it perishes much sooner than it otherwise would do, it seems evident that timber should be felled when there is least sap it, or when the sap is most fusible or in a liquid state.

The ancients chiefly regarded the age of the moon in felling timber: their rule was to fell it in the wane, or four days after the new. An Amherst, Massachusetts, cooper states that he formerly furnished three oil mills in that vicinity with casks made from oak felled in June; because, he says, timber felled in winter being more porous, would not contain oil; and that oak and walnut cut in June, would not powder-post.

That the moon has an influence on the sap, no one who has paid attention will have occasion to doubt; the liber or inner bark is less adhesive at this stage of the moon, the ligneous or woody matter being in a more fluid state. It has been ascertained by various experiments, that the woody part of oak in full vegetation, is only four-tenths of the whole; air constitutes one-fourth of it, and the rest consists in sap. Light woods have still a much less quantity of solid matter; but the season of the year and age of the tree occasion considerable variation.

Timber should be cut when of a proper age, for when it is either too young or too old, it will not be so durable. They should be cut in their prime, when almost fully grown, and before they begin to decay; and this will depend upon the dryness and moistness of the soil where the timber grows. The time of its commencement to decay, or when it is going past its prime, is when the concentric circles are less and less, as may be seen in the oak, beech, walnut, &c. These circles yearly enlarge the trunk by the formation of a new alburnum or soft wood, which the next succeeding year becomes the lignum or hard wood.

The wood of the north side of all trees which grow in this climate is the weakest, and that of the south side is the strongest. The heart of a tree is never in its center, but always near to the north side, and the concentric circles or annual coats of wood are thinner on that side. In conformity with this, it is the general opinion of carpenters, that timber is stronger whose annual plates are thickest; the air vessels makes the visible separation between the annual plates. Therefore, when these plates are thickest they contain a greater proportion of the woody fibre.

Timber, after being felled and sawed, must be seasoned, not by standing upright, but lie one piece upon another, only kept apart by short blocks interposed to prevent a certain mouldiness which they will contract in sweating on one another. Some advise the planks or other timber to lay in water a few days, in order to extract the sap, and afterwards to dry in the air; by this means they will be prevented from cracking or chopping. Some scorch and season them in the fire, such as piles, posts, &c. which are to stand in water or earth They are charred and seasoned by burning them round in a strong violent flame, until a black, coaly crust is formed; the internal part of the wood is thereby so hardened, that neither earth nor water can damage it for a long time afterwards. An excellent preservation of wood by charcoal, especially applied to eave troughs and water spouts is first to lay on a coat of drying oil, then immediately dust it over with a thick layer of charcoal finely powdered, and contained in a muslin bag. After two or three days, when the oil is thoroughly dried, brush off the loose particles of charcoal, and cover that which adheres, with a coat of paint, and in a few days after, a second; the whole will become a fine solid crust, and is said to preserve the wood sound many years.

The charcoal should be fresh made, or heated again in close vessels, so as to expel the water, which it greedily attracts from the air. Some preserve their posts by salt, by boring a hole into the post that is to be covered by earth, and, after filling with salt, plug it up. Some advise to season the timber before it is cut down, by taking off the bark a year before it is cut; the sap is expelled, and the alburnum is converted into wood in the course of the year. Sills and sleepers for out buildings should have a free circulation of air to save them from decay.

SOLOMON W. JEWETT.

Weybridge, Vt. Feb. 23, 1840.

POPULAR ERRORS.

MESSRS. EDITORS—It would be amusing, were it not an incontrovertible proof of an ignorance that ought not to exist among any body of men, certainly not among the farmers of the United States, to read or hear the strange, not to say ridiculous, notions, which some of them entertain. These errors, in most cases, may be traced to two causes: ignorance of the most common laws of nature, or inaccuracy of observation. With your leave, I will point out a few of these, some of which have long been naturalized among us, and some of which appear to be of indigenous origin.

One of these errors, which occurs to me now, relates to the fecundation of plants, and may be found on the 176th page of the Silk Grower, in an article on horticulture. After a long argument to prove that the impregnation of Indian corn does not take place from the pollen as is usually supposed, and as is so easily demonstrated, the writer goes on to say: "Oh, no, this is much too clumsy and bungling work to be believed in. The effect [impregnation] is, doubtless, produced by *scent* or *smell*; for, observe, the ear is constructed, and is at this season, so guarded, so completely enveloped, that it is *impossible* for any *matter* whatever to get at the grain, or at the chest of the grain, without the employment of *mechanical force*." The error, in this case, arises from the supposition that the pollen must be conveyed to the grain, whereas it is only necessary the fertalizing dust should reach the *silks* which are the organs of impregnation belonging to the ear.

In another agricultural paper, I not long since noticed a paper from a farmer on the culture of corn, in which he earnestly contended that the impregnation did not take place by the pollen, but that certain filaments or threads, invisible except at particular times, extended from the blossoms to the silks, which effected this fecundation. These spider's webs, for such every attentive observer is aware they must be, must be about as effectual in the process of impregnation as the "scent" in the first writer's article.

On a par with these, is the theory of transmutation, or the change of one species of plant to another during the period of vegetation. Of these believed transmutations, that of wheat into chess, is perhaps the most common, and certainly the most pernicious, as the belief has the effect of rendering the believer careless in cleansing his soil from that weed, or sowing pure seed in his field. Few men would believe that cutting off, or bruising the top of a young oak would change it to a sugar maple; or that the same operation, performed on a young pine, would convert it into a tamerack; yet, either of these suppositions is just as feasible, and consistent with the law of nature, as that any other plants should undergo a similar transmutation. There are some flowers that may be changed by the action of mineral agents in the soil, from one color to another: but the seed of such a flower, the chrysanthemum for instance, never produces a rose or geranium.

Another common error relates to the migration or hibernation of birds, particularly the barn swallow, or the chimney swallow. It is supposed by many that these birds descend to the bottom of ponds, lakes, &c.; in the mud of which they lie torpid during the winter, as it is well known the toad, frog, and lizard do, and as the bat does in caves or other dark recesses. These birds migrate, as their presence in the equatorial regions, during their absence from ours, conclusively proves; and the idea of their being torpid has been countenanced by the fact, that the flight of most migratory birds take places during the night.

In many parts of the country there is an impression among farmers, that a kind of vegetation takes place among the white grubs, the product of which is the common blackberry bush. That a species of vegetation sometimes takes place on the bodies of insects, is doubtless correct; and the larvæ of the Melolontha, and the vegetating wasps, are examples of this. The plant produced, however, is a species of the fungus tribe, and not any way related to the higher order of plants.

In the last number of the sixth volume of the Cultivator, is an attempt to show that the Hessian fly and the Chinch bug, two of the greatest enemies to the wheat crop and the farmer, that this country has, are the same insect, or rather that they have the same parentage and origin: and from the remarks there made it would seem that this opinion is quite common among our southern agricultural friends. This, it would seem, is the doctrine of transmutation applied to animals, instead of plants, and appears to involve the same absurdity. In a reply to an objector in the American Farmer, the advocate of this transmutation of animals, gives the following as proof and illustration:

"Agricultor may think it strange and contrary to the order of nature, that the large white grub worms could be transformed or turned to grasshoppers. But such is the fact. A gentleman of highly respectable standing in this country, caught one of these long, white cut worms, and placed it in a box with some loose earth, and after it was confined for some days, he examined it one morning, and found it had changed or produced a grasshopper. Is it more strange for a cut worm to be transformed into a grasshopper, than that a Hessian fly should deposite an egg which should produce a Chinch bug?"

That the large or long white grub is the larvæ of the May bug, is a fact so easily ascertained, and well known, that the mistaking of that insect for a grasshopper, though it might not affect the standing of the gentleman alluded to, must have a tendency to impeach his knowledge of entomology. The grasshopper, when it first appears, is an insignificant, feeble animal, and it is only by long feeding and growth, that it becomes formidable. The May bug or melolontha, on the contrary, emerges from the earth, like the other beetles of full size, and commences the business of procreation with little delay. To suppose that such a large and formidable insect as the red headed grub, should be the parent of the tiny grasshopper, is having the mountain labor with a mouse, in good earnest. The Chinch bug and the Hessian fly are both *perfect insects*, and to suppose that they can have the same parentage is preposterous. Insects in their several stages, appear under such different forms, that unless traced through the series of transformations, mistakes may well occur; but in their perfect state, as the Chinch bug and the Fly, such mistakes are unnecessary. The theory is as incorrect, as to suppose that the progeny of the same Durham bull should in one case be like himself, and in another, be a rhinoceros.

Perhaps I have occupied enough of your valuable columns for this time. I may possibly recur to this topic hereafter.

M. S. D.

Genesee, 1840.

REARING CHICKENS.

MESSRS. EDITORS—Having made some experiments in the raising of chickens, a business that forms a part of every farmer's occupation, I send you a description of my present plan of operation, which appears to answer admirably. Under an out-house 16 by 18 feet square, raised 3 feet above the ground, I have dug a cellar, 3 feet below the ground, making the height 6 feet altogether. Eight feet in width of this cellar is partitioned off for turneps, the remaining 10 by 16 feet, being sufficiently large to accommodate 100 chickens, or even more. This cellar is enclosed with boards at present, but it is intended to substitute brick walls in the course of a year or two. The roost is made sloping from the roof to within 18 inches of the ground or floor; 12 feet long by 6 feet wide. The roost is formed in this way: 2 pieces of 2 inch plank, 6 inches wide and 12 feet long, are fastened parallel 6 feet apart by a spike or pin to the joist above, the lower end resting on a post 18 inches above the ground. Notches are made along the upper edge of these plank, 1 foot apart, to receive sticks or poles from the woods, the bark on. When it is desirable to clean out the roost, the poles being loose are removed; the supports working on a pivot are raised and fastened up, then all is clear for the work of clearing out. I next provide the chickens with corn, oats and buckwheat, in 3 separate apartments, holding about half a bushel each, which are kept always supplied. They eat less, I find, if allowed to help themselves to what they want, than if fed to them in the usual way; for in the latter case, each tries to get as much as it can, and thus burdens itself, but finding in the former case that they have abundance, they eat little, and that generally in the morning early, and in the evening going to roost. I have 60 chickens, and they eat about 6 quarts per day of the three kinds of grain, in the proportion of twice as much corn as buckwheat or oats. In the roost is also placed a trough of water, renewed every other day; burnt oyster shells, shell-marl and ashes. A row of nests is constructed after a plan of my own, and does well. It is a box 10 feet long and 18 inches wide; the bottom level, the top sloping at an angle of 45 degrees to prevent the chickens roosting on it; the top opens on hinges. The nests, eight in number, are one foot square; the remaining six inches of the width is a passage way next to the wall, open at each end of the box, and another opening midway of the box. The advantage is to give the hens the *apparent* secrecy they are so fond of.

The following are the advantages of this plan of keeping chickens. By having a roosting place partly under ground, the chickens can keep warmer through the winter than any roost above ground could be made without fire; and this is absolutely necessary to induce them to lay. When fed plentifully in the winter, they lay enough eggs to pay for the grain, and in the spring they will repay fourfold. Even now, February 17th, our hens lay enough eggs to pay twice over for the grain they eat. I would recommend this plan to all who wish to make their chickens profitable. As fowls are very troublesome, running about the farm, I propose to enclose a few rods square of ground, with a pale fence 8 feet high, and confine them in that, allowing them occasionally a little more liberty. Respectfully yours,

E. H. VANUXEM.

Long-Branch, N. J. Feb. 17, 1840.

HOG ILLUSTRATION—A TRUE PICTURE.

MESSRS. EDITORS OF CULTIVATOR—We are all of us willing to show forth any thing that will illustrate any favorite theory, or favorite breed of cattle that shows to our own advantage. Would it not be equaly useful if we were equaly willing to illustrate the reverse of the picture? I think it would. And, therefore, I offer the following TRUE PICTURE of the profits of that universal breed of hogs, that covers the face of our country, to the exclusion of a better breed.

When I settled in this new country a few years ago, I determined that I never would be the owner of any of that vile race of animals which infest the country, and which, before the discovery of the name of "land sharks," used to be known by the name of hogs. But being unable to procure any thing worthy of the name, the force of circumstances made me the owner of several breeding sows in the winter of 1837, then running in the woods. With a force of dogs, men and guns, I caught and brought them home, and confined them in a lot, where I kept my cattle upon prairie hay. I found no difficulty in wintering these wild animals which I had bought for hogs upon the same. In the spring, they "multiplied and replenished" the woods. In the fall there was not sufficient "mast" [i. e. acorns and nuts] to fatten them; and I was not so *green* as to undertake making pork of them with corn, and they lived to multiply another season.

The next fall, *mast* was plenty, and "wood hogs" were fat. I now had "from fifty to one hundred head," but fat hogs in the woods will die; and when killing time came, I could only lay violent hands on eighteen. Only one-half of them were fit to be called pork. I still had a large "claim" upon hogs in the woods; but last fall I could only muster some ten or a dozen "fit to fatten;" and these I let a neigh-

bor, not so well experienced in *hogology* as I was, have to "fat at the halves." By strong exertions, he succeeded in making a pen stout enough to keep them upon a continual trot around it, without finding an outlet. Here, after eating and wasting in the mud more than fifty bushels of corn apiece, he brought me my half of "hog meat." Another neighbor being destitute, and this looking to him "as though it might be eatable," I told him to take it, and we would never quarrel about the price or mode of payment; and I bought my "pork" for my own use.

But this is not the end of my hog speculation. I still had five shoats, and upon them I determined to try what good keeping would do. Accordingly, I "caught them," and put them in a good warm pen, composed of an eating room, a sleeping room, and a retiring room. Nearly every day have I furnished these (permit me to say, devils) with good dry straw, and nearly every night have they slept in a wet, filthy bed. The straw they have eat and scattered through the pen, and all the filth that they should have left in the outside room, they have deposited in their beds. Whoever knows me, knows that no domestic animal of mine, ever lacks food; and it has not been spared upon those in the pen. Forgive me, but I can't call them hogs. Ruta bagas, beets, potatoes, bran, and house slops, including the milk of two cows, all winter, have not been spared.

Reader, is the feed and care thus bestowed, worth one cent a head each day? Then from the first of October to this time is 166 days. I offer you a speculation. Give me one dollar each, and the animals, now ten months old, are yours; and I will give you my bond with good security, that, so far as I am concerned, you shall have a perfect monopoly of all the breed, from this time, henceforth and forever.

I have written to Mr. Allen, at Buffalo, for a pair of HOGS, and I shall send to Mr. Bement, at Albany, for another pair, by the first opportunity.

Will either of these gentlemen, or some other, publish a reverse to my picture?

I am a most sincere hater of alligators and landpikes.

Your friend,
SOLON ROBINSON.

Lake Court-House, Ia. March 15, 1840.

"SALTPETRE IN MEAT."

MESSRS. GAYLORD & TUCKER—In the twelfth number of the last volume of the Cultivator, there appeared a communication on the use of saltpetre in curing meat; and the following reason was assigned for abandoning its use, viz:—"It ought to be known, that saltpetre absorbed by the meat, is *nitric acid, or aqua fortis—a deadly poison*, whereby our salt meat becomes unpalatable and pernicious." A sufficient answer to which is found in the fact—that one of the constituents of common salt, is muriatic acid, as deadly a poison as the nitric acid of the saltpetre. And we might, with as much propriety say, that the salt absorbed by the meat is muriatic acid, as to say that the saltpetre is nitric acid or aqua fortis. Therefore, the objection applies with as much force and truth to the use of the one as the other.

Saltpetre is the product of a chemical union between nitric acid and potassa, (potash,) and salt, of a like union between muriatic acid and soda—and in these, as in all other cases of chemical combination, the substances combining, not only loose their properties, but the substances produced generally possess properties entirely different—frequently the very opposite, of those of either of their constituents. From which it follows, that a perfectly innocent compound may be produced by the combination of two noxious substances—or a noxious compound, by the combination of two innocent substances; and it is very improper, and well calculated to mislead, to designate a compound substance by the name of either of its constituents, as in the communication referred to, in which nitric acid and saltpetre are several times used as if they were but different names for the same thing.

Some persons think a small quantity of saltpetre very beneficial to their meat—others think it useless—the former need not be frightened from its use by the fear of being poisoned with aqua fortis—nor the latter deterred from trying it. J.

Lexington Va. March 19*th*, 1840.

N. Y. STATE AGRICULTURAL SOCIETY.

Report of the Committee on Agricultural Implements.

The committee appointed at the last annual meeting of the Society to examine any agricultural implements that might be submitted to their inspection, beg leave to report, that they have examined the horse power, the thrashing machine, the separator, and the winnowing machine made by Mr. Pitts of this city. The horse power is of the revolving floor kind, and is wide enough to admit of two horses abreast, which the committee think is a decided improvement, inasmuch as horses work more quietly and steadily in company than when alone. Besides, most farmers can as conveniently employ two horses in thrashing, as one; and when this is the case, a larger power is employed at almost the same expense as a smaller one, beside securing greater steadiness and uniformity in its application. The horse power may, however, be used with one horse, when it is inconvenient to employ two.

The thrashing machine is a spiked machine, and this possesses the advantages and defects appertaining to machines of this kind. Mr. Pitts' modifications, however, have, in the opinion of the committee, great value; especially the attachment of a ratchet wheel to the driving wheel, by means of which the power, of whatever kind, may be suddenly and immediately stopped without being retarded by the momentum of the thrashing machine. It can easily be conceived that cases may occur where the safety of the horses employed would require the horse power to be instantly stopped, which could not be the case unless the contrivance described, or something similar, be adopted. In one instance, at least, the life of a valuable horse has been saved by means of this simple and ingenious contrivance.

The separator is attached to the thrashing machine. Its object is to dispense with the rake in separating the grain and chaff from the straw.

It consists of a revolving apron, across which are placed vertical wooden slats about two inches in height, at intervals of about two inches. The ends of the slats are fastened in two opposite endless wooden chains attached to each selvage of the apron. Thus are formed numerous pockets into which the grain falls, while the straw rests upon the upper edges of the slats forming the pockets. A complete and perfect separation is thus effected, by means as simple as ingenious. By the revolution of the apron, the straw and the grain in the chaff, are carried forward. A spiked roller throws the straw forward beyond the machine, while the grain and chaff are deposited upon the winnowing machine.

The winnowing machine is substantially the common fanning mill. It has, however, one very judicious appendage, viz: elevators similar to those employed in grist mills; by means of which every thing that passes through the screen is again returned to the action of the fanners. The grain is deposited in boxes placed to receive it, and is found to be perfectly free from dust and chaff. The committee are of opinion that it would be necessary to pass the grain repeatedly through the common fanning mill, to render it as clean as the grain which is passed but once through this machine of Mr. Pitts.

The committee are well aware that it is imperative upon them not to speak in too strong terms of any machine submitted to their examination, but they cannot forbear saying that in their opinion the separator of Mr. Pitts is worthy of all praise.

The celebrated Professor Low declares that to Andrew Mickle belongs the honor of having perfected the thrashing machine. But if any one will compare the cumbersome, intricate, and expensive machine of Mickle, with the compact, simple and cheap machine just described, he will be satisfied that this meed of praise is justly due to Mr. Pitts.

JOEL B. NOTT,
C. N. BEMENT, } *Committee.*
V. V. BULLOCK.

CHINESE TREE CORN.

MESSRS. EDITORS—I take your excellent paper, the Cultivator, from which I received the information of Mr. Thorburn having the Chinese tree corn. I wrote to Mr. C. N. Bement, and he applied to Mr. Thorburn, who sent me fourteen ears, and six Rohan potatoes. I also received two other ears from New-York. I planted them on the 10th of May. I put but two grains in a hill. The very points I put three grains, being so very small. I attended it with my other corn, and I think it to be a very great acquisition. It is so very early and very productive. In three months after I planted it, it was hard enough to have turned my hogs into, thus being in advance of the other corn about four weeks. I always hog down one field of corn, then sow it in wheat; it is a good fallow crop, if it can be eat down soon enough. The Chinese corn will have the advantage of all other corn, it coming ripe so soon that you can get your corn eat down by the middle of September, and your wheat sowed in good season. My sixteen ears planted one acre and twenty rods. I gathered seventy bushels of corn, very sound and good. I think I can raise one hundred bushels from one acre by planting it three feet apart and three stalks in a hill. It does not grow as high as our corn, and will bear closer planting. I took four stalks to the agricultural fair at Cincinnati. They bore twenty ears, and the committee awarded me a premium of one pair of sugar tongs, worth $3.25. I see in some of the papers some fault is found with Mr. Thorburn. I think it is without any good reason, for I think it to be a very productive and early corn.

THE MAD ITCH.

I see in a late number of the Cultivator, Mr. Demy asks for a cure for the mad itch. From my experience about it, I think it to be a very hard complaint to cure. I think the cause of the mad itch is the cattle running where corn stalks are cut up and thrown to hogs. The hogs chew the stalk and spit it out, and the cows eat it; and the substance being all extracted, it lies in the stomach and becomes dry and hard, and it will not digest at all. In the fall of 1828, I had my hogs running in the pasture with my cows; I cut up corn and threw to the hogs; the cows came occasionally at first; but after some weeks, they were always there at feeding time. In three days I had five milch cows die. The second and third I cut open; they all looked inwardly very well, but the stomach was hard; I cut it open, and the particles of the chewed stalks were hard and dry; it was the first of the mad itch I ever saw. When they were first taken, they would walk around the pasture fence, hold up their heads and look wild; they would occasionally run to the fence or trees or stumps, and rub the under jaw, or between the horns, and one of mine rubbed one of her eyes entirely out, and one of them went into the great Miami river and waded and swam in the river for five hours; she then swam to some driftwood, and put her head on it and died in the water. I think the best cure for it is to keep your cattle away from your hogs in the fall of the year, when you feed corn on the stalk.

JOHN REED.

Cherry Ridge Farm, O., Jan. 28*th*, 1840.

SPRING WHEAT AFTER POTATOES.

MESSRS. GAYLORD & TUCKER—I send you some experiments on sowing spring wheat after potatoes, without plowing. I think in 1836 I made the first trial. I had a rich piece of ground of one and three-fourths of an acre, descending to the north. The year previous to my coming into possession, it had been sowed with turneps, but there was an entire failure of the crop. I spread another coat of manure in the spring, which was hauled out the fall previous by the former occupant, plowed the ground the last of May, fine and deep, once only; harrowed well, planted with the common yellow potato in my usual way, which I have practiced for twenty years. It was the last year of our agricultural society's existence. My potatoes looked so fine, I measured off one acre according to the rules of the society, which then was that the ground should be measured, the potatoes dug, and measured by men under oath. The acre yielded 553½ bushels. We found one potato that weighed 3 lbs. 5 oz. and there were many that weighed from 2 to 2½ lbs. I got the premium by more than 200 bushels. So much for the potato crop.

The next spring I purchased four bushels spring wheat. I cleaned out of it, by fanning and washing in strong brine, about twenty quarts, leaving three bushels and twelve quarts. About the 1st of April, we had a warm, dry spell. I went and took a look at the ground, and it looked so clean and mellow, I determined to try an experiment. I accordingly went on with my team and harrow, at the same time set another team to plowing two lands, fourteen paces wide, making about one-third of an acre. The second or third day, sowed the whole broad cast, after being well rolled in lime. That which I sowed without plowing, I harvested six days previous to the other, it being ripe, and the quantity and quality of the former was far superior to the latter. Now for the product, which was 1353 sheaves, yielding a little over six bushels the hundred, making over eighty-one bushels at six bushels the hundred; every bushel of which weighed 62¼ lbs.

The next year I plowed the ground once, harrowed and planted with corn, three feet one way, and from one and a half to two the other. I harvested from one acre by actual measurement, one hundred and four bushels of good corn.

The next year plowed once, sowed with barley, had a fine crop, but do not recollect the quantity, as I did not take an account at the time, and seeded with clover and timothy. The reader will see that these four successive crops, were raised with but very little labor and expense, and that these four crops yielded as much or more clear profit than some five or ten acres equaly as good by nature.

My object in writing this communication, is, first, to call the attention of the farmer to the importance of tilling no more land than he can well do, and make profitable; 2d, that he would make the experiment of sowing spring wheat on potato ground without plowing.

In 1837, I had two pieces of potato ground of one acre each, which were manured and treated in every respect alike. One piece I plowed, and the other I did not; sowed both the same day. The field that I plowed I thought was of the two most promising, but when harvested, the other had the preference. I think I have tried this, every year but one since 1826, and that was three or four years ago, when the snow came on early before the ground was frozen, and lay very late in the spring, which made the ground very hard and heavy.

ROTATION OF CROPS.

As I have a little more leisure, I will trouble you with a few more remarks on cropping. My method is, in the first place to make all the manure I possibly can through the season, haul it on my potato and corn ground, at the rate of from thirty to thirty-five loads, such as we carry, to the acre; till well; get a good crop, cold or hot; follow with two white crops, generally with wheat and barley or barley and oats, mixed half and half, for grinding for hogs, horses, cattle and sheep. I had a very fine crop the season past; and I can recommend this crop to those who cannot conscientiously grow barley for whiskey or beer. After taking off these two crops, seed with clover and timothy, at the rate of one peck the acre. E. W. F.

Warren, Herkimer Co. N. Y. March 21, 1840

"MINERAL RODS."

MESSRS. EDITORS—"*The place to dig a well*," most convenient to our habitations, attended with the least expense, and which, when completed, will afford the greatest supply of water, is certainly a subject of no trivial importance; and it is one of anxious inquiry in most sections of the Union. That person who shall discover, and communicate to the public a sure method of finding the subterranean currents or reservoirs of waters, most convenient to our dwellings, will richly deserve to be honored as a most distinguished benefactor of our race. Your readers are indebted to your Ontario correspondent, Mr. Adams, for bringing the subject before them in the February number of your invaluable CULTIVATOR: and they would owe no measured amount of gratitude to him who shall supply them with the requisite information upon this subject, through the columns of your most acceptable monthly visiter.

If the forked branch of the peach, or other tree in the hands of certain favored individuals, will unerringly direct them to the concealed fountain, and indicate its subterranean course and depth—as most professors of this art believe and affirm—we entreat those who are in possession of the facts, to lay the evidence before the public, that all scepticism upon this subject may be eradicated from the minds of the candid, reflecting portion of community. Others will continue, as a matter of course, to receive as truth the most absurd propositions, or reject with contempt the most lucid demonstrations, as their prejudices or whim-whams may chance to incline.

I was, some years since, for several hours, a firm believer in the truth of this subject; and, during this time, I had, what I verily supposed, the best possible evidence in its favor—my own individual experience; and I have been intimately acquainted with several highly respectable individuals, in different sections of the Union, from New-England to Louisiana, who as firmly believed in its truth, as in any matter of fact that occurred under their immediate observation. These individuals not only believed in the truth of this art, but they frequently practiced it, as they supposed, greatly to their own benefit, and for the good of their neighbors. I have witnessed experiments made by these individuals, and carefully noticed the mysterious working of the rod in their hands, but I have utterly failed to discover any convincing proof, that a subterranean current or reservoir of water, over which they were passing, had caused the motion of the rod. If sufficient evidence of this is known to any of your readers, let this evidence appear in the Cultivator for the benefit of the public; and none will receive it with more profound gratitude than the subscriber. The cautious, discriminating portion of community are much averse to being volunteers in faith. They readily admit the truth of facts, when sustained by appropriate evidence; and they firmly believe that truth needs not the aid of suppositious facts to render it useful to mankind; but is, "when unadorned, adorned the most."

I am not aware that the mineral rod, used in searching for water, has ever been described in books; and as it may interest your readers to know how this art is practiced by its professors, I will here explain the method of selecting and using the rod, as practiced by the adepts whose experiments I have been permitted to witness. For the rods used in this art, select a forked shoot of the hazel, peach, or other *stone*

fruits, of one year's growth, that the wood may be well hardened and elastic. Let the two prongs of the fork be of equal size and length: from eighteen inches to two feet will probably be found most convenient. The prongs, at their division, should be from one-fourth to three-eighths of an inch in diameter, and gradually tapering to their extremities. With the palms upward, grasp firmly with each hand, a prong of the rod, the united portion of which should stand perpendicularly some ten or twelve inches above the palm of the hands. Holding the rod in this position, with the hands separated about fifteen inches, walk deliberately across the grounds you wish to examine, and at the same time holding the rod with a firm close grasp, and keeping your attention continually directed to it, that you may observe its slightest motion. When you arrive near a subterranean stream or reservoir, the united end of the rod will begin to turn downwards. When vertically over the thread of the stream, the rod will be attracted with the greatest force; and, in general, it will bend downwards in a degree proportioned to the magnitude of the current, its proximity to the surface, and the *power* with which the experimenter is naturally endowed of managing the rod.

In searching for water, it is essential that the rod used should be green. But in seeking for the metals, a dry rod is employed, and this rod must be taken from the *witch-hazel*. Where the branches of this rod unite, it is hollowed out and charged with quicksilver. I have never seen a rod prepared for searching for mines and concealed treasures; and, of course, cannot describe it from my own personal knowledge. The description here given is derived from persons respectable for their intelligence and moral worth; and whose veracity is above suspicion. These persons have assured me that they have witnessed experiments in which a rod of this kind, in the hands of *gifted individuals*, would apparently direct them unerringly to a concealed coin, that had been hidden for the purpose of testing the truth of the claims of professors of this art.

If there be, in reality, no truth in these pretensions, there must be a most surprising aptitude in the rods, and in the manner in which it is held and used, to deceive the persons practicing this art, and those who witness their experiments; and to dupe them into the belief that certain persons possessed some occult and useful powers, not imparted to the common mass of mankind.

If any of your readers are curious in matters of this kind, let them try the experiment in the manner herein directed, and there will be few who will fail to be highly interested and amused—if they hold the rod firmly, proceed with attentive caution, and mark with critical care its slightest motions—with its apparently violent inclination to bend towards the earth, even in opposition to what may at first appear their most determined efforts to restrain it.

Some years have passed since this experiment was showed to me by a worthy and esteemed friend who had learned the art in the state of Tennessee. Astonished at its motions in his hands, I tried the experiment under his instruction, and carried the rod according to his direction. To my utmost surprise, the rod worked with great power in my hands, and at the identical spot where I had seen it bend and writhe in the hands of my friend. Elated with my unexpected success, I continued my observations, noting with the most critical attention, all the circumstances attending this experiment. I suspected from the motion of the rod in certain places, that there was some hitherto unexplained *attraction* between the united portion of the rod, and the subterranean current of water. If my suspicions were correct, the rod would necessarily be uniform in its motions when brought over the same place. But to my great chagrin, the rod, which had bowed with so much force over a particular spot, that its torsion had broken the bark, when brought again to the same place, gave no indications of water, but stood quietly erect; or now obsequiously bowed its head over a locality, which it had formerly pretended was dry as the desert of Sahara. Here, then, were some mortifying and unexpected facts to be explained; and I now set myself to observe, with the nicest care, the action of the muscles of my hands and arms while performing these experiments. My attention was soon rewarded by detecting the *truth*. An involuntary, and before unobserved, motion of my hands and arms—too slight to be observed by the nicest eye of a person walking at my side—had produced the motion of the rod; and I can assure you, gentlemen, and your readers, that a rod held in the *same manner*, in your hands, will writhe with as much violence, as it will in the hands of the most successful "water-witch" in the United States, whether layman or clergyman. Since I have detected the *true cause* of its motion in my hands, (and, as I fully believe, in the hands of all others,) I can depend with the utmost confidence upon the forked hazel to work in my hands, with any required degree of force, or not at all, in any place, as I please. And from the general results obtained by sinking artesian wells, we are warranted in promising gentlemen a plentiful supply of water, whenever they sink a well where the mineral rod indicates, if they but sink the shaft a sufficient depth.

Immediately after detecting the true cause of the motion of the rod in my hands, and, as I fully believe, the *only cause*, of its motion in the hands of any one, I fully explained to my friend how we had been gulled by our heedlessly neglecting to attend to all the circumstances of the experiments we had made; but my success in his case was not very flattering. Indeed, I have rarely succeeded in convincing an adept in this art, that the result of his experiment was entirely fallacious; for it is as true in this, as in politics or religion, that

> "A man, convinced against his will,
> Is of the same opinion still."

The public are deeply interested in knowing the truth upon this subject. If the claims of these "water-witches" can be sustained by *facts*, decisive, and well authenticated, let them be spread before the public in the columns of your journal, that all reasonable doubt may be driven from our minds. Until this shall have been done, let every individual be upon their guard, and never suffer themselves to commit the folly of sinking a well in an inconvenient situation, merely because an honest, well meaning dupe has bent a peach or hazel twig over the place.

N. IVES.

Wallingford, Vt. Feb. 1840.

Geological Survey—Root Crops, &c.

Messrs. Gaylord & Tucker—As you have taken the editorial department of the Cultivator, I feel greatly disposed to transfer to you the confidence I used to place in its late lamented editor, in all matters relating to the theory or practice of farming; a confidence begot in me by a close, attentive perusal of every number of the Cultivator, from the first prospectus up to the present time. And as the several volumes stand in good, substantial binding on the shelf, I often regard them as a legacy worthy to be left to my children. Now, sir, that the Cultivator may suffer nothing in its high reputation, by its union with the Farmer, is all that the subscribers can wish; and from an intimate acquaintance with the Genesee Farmer for the last two years, I have not a doubt but their wish will be gratified. If the Cultivator and Farmer is continued with the same spirit and originality of the two numbers already received, I promise to add so many volumes of it to this valuable legacy, as I may yet number years of life.

This communication was begun with the intention of suggesting through the Cultivator, to my brethren of the plow, the propriety of petitioning our legislature in due time, that when the geological survey of this state shall be completed, a copy of the same shall be deposited in each of the school district libraries in the state, instead of supplying the members of the legislature with extra copies, which never get a general circulation, but are commonly laid on lawyers' book shelves, along with musty records, out of the reach of an agricultural community. Farmers ought, from the nature of the subject, to be interested in the survey more than any other class of citizens; and if the plan proposed be adopted, many will be brought in contact with the work, who would never think of inquiring after it, if it was out of sight. It will not certainly be anti-republican for every man to go to the district library for part of his reading; and thus there will be no room for favoritism in the distribution of the work.

I also wish to call the attention of such farmers as are about commencing the cultivation of root crops, to the importance of selecting that kind of crop which is best adapted to their several soils. Loamy soils are absolutely necessary for the cultivation of roots; and the lighter the loam, the better for the turnep, while a heavier one suits the beet. This accords with the experience of my neighbors and myself. We have raised three crops of the mangel wurtzel, two or three of the carrot, and four or five of the ruta baga. Our soil is a loam sufficiently light for most farm crops, but rather apt to become hard, if worked while wet, resting on an argillaceous slate. The result of our experience is, that while the ruta baga has never exceeded the rate of four hundred bushels per acre, and the carrot about the same or rather less, the mangel wurtzel has, in no instance, fell short of a thousand bushels.

It may be useful to state my method of preparing the seed of the mangel wurtzel for planting. Owing to their rough exterior and lightness, they are apt to lodge in the holes of the drill; while to plant them by hand amounts to almost a prohibition of the crop on a large scale. First, soak the seed in water, until it is ready to sprout; then pour off the water, and add so much plaster or lime as will absorb the moisture, stirring it up, then put the seed in small quantities into a sieve or colander, and give it a swinging or rotary motion, like riddling grain, until each seed is rendered smooth and round by its coating of plaster, while the loose plaster passes out at the holes of the sieve. The seeds now put into the drill, (I use Robbins' drill) will be so smooth and heavy, that it will drop with great regularity, and come up with certainty.

Yours, &c.

L. B. ARMSTRONG.

Kingsbury, Feb. 10, 1840.

WHITINGTON WHEAT.

Messrs. Gaylord & Tucker—Please to have the goodness to publish in your next number, the following communication:

As my character officially (as a seedsman) has been animadverted on, relative to the sales I made last spring of the Whitington New White Wheat, for spring wheat, when it has been ascertained (and an experiment made in my own garden proved the same) that in our climate it should be sown in the fall, I would merely observe that no design to deceive the public was dreamed of, as some inconsiderate persons have thought proper to remark, even in the papers. I could have no great emolument from the supposed imposition, as my whole stock was twenty-eight bushels, and sold at but a trifling profit, as it cost £1 per bushel in London, to which heavy expenses are added: I sold it at 25 cents per quart, and gave a good deal away. My own opinion, and that of many of our first agricultural gentlemen, is, that it is the finest wheat ever introduced to this country, and they one and all intend making a trial of it the ensuing fall. Mr. Whitington, of Surrey, England, who sent it out to me, writes, in reply, (26th Sept.) to my making known to him the disappointment of those who tried it: "In answer to yours, I am as much vexed, as I am confounded; I really am at a loss to account for the extraordinary results you communicate. I enclose you one of last year's circulars, and one of the present season's. As regards its winter properties as well as spring, it has been tested, and publicly admitted to be the best wheat in this country for rapid growth, standing uninjured in the most severe weather, and yielding by an excess of 16 bushels per acre off the very poorest soils, every other tried variety of white wheat. As to its failure for a spring wheat with you, I repeat I cannot account, neither can I learn of American gentlemen here. It is of a Swiss origin, which induced us to try it as a spring grain for two seasons, sowing it in February, which in this country is the latest period for sowing wheat. Our circular expresses what was done with it in 1838, and this year, 1839, we sowed it on the 23d and 24th of March, fifteen acres of it, and all was housed by the 25th of August. In addition to this fact, Messrs. G. Wildes & Co., Mr. J. Fothergill (the London corn factor,) Messrs. Phillipson, the extensive farmers of Sutton estate in Surrey, have all had capital crops of it, from sowings in February and March; while Mr. Baxter, the large flour factor, who also farms 300 acres, only nine miles from London, sowed ten acres of it during the first week of April, and has carried a capital crop; he assures me fully forty bushels per acre. We stand too high connected and engaged as agents for several noblemen's estates, and farming largely, as well as being land surveyors, for upward of forty years, to represent falsely any article, as do also our agents, Messrs. Gibbs & Co. I can have no right to doubt you, but whether and what are the local causes which have created the disappointments, ought to be best known by you, and under these circumstances, I would not advise you to sell it again as spring grain. I regret you did not write me sooner, that I might have sent you some in time to sow the present autumn, the successful issue of which is beyond all question. I will send you twenty bushels by the next packet, hoping it may yet arrive in time for this autumn's sowing, and from which you can supply to those who may, under their hopes, insist on some sort of compensation. If it arrive in time, and your weather be mild and open, sow the wheat, desiring it may be buried three inches deep."

The wheat sent out to reimburse, came too late to do any thing with it the last autumn, but will be delivered in such quantity as was before purchased, gratis: can be kept in a case or glass demijohn, sealed air tight for fear of weevil, until the proper time to sow it next fall.

Sufficient quantity has been sent to *W. Thorburn, Albany*, to reimburse, in such quantities as was purchased of him (gratis) last spring.

GEO. C. THORBURN.
11 John-street New-York.

PREPARATION OF SEED CORN.

Messrs. Gaylord & Tucker—I send you the result of an experiment made in planting corn the past season. Having seen statements of the benefits derived from steeping the seed in a solution of sulphate of iron, (copperas,) as securing it against the ravages of birds and cut-worms, we resolved upon giving it a trial. Mr. Jacob Kirk (with whose crop the experiment was tried) procured a few ounces, dissolved it in hot water, and poured over the corn. After remaining in the solution from six to eight hours, the corn was taken out, rolled thoroughly in plaster, and planted. A few rows of the same kind of corn was planted in the middle of the field, without steeping the seed, but just as it came from the cob. The field was likewise planted with pumpkin seeds, also without preparation. After the corn and pumpkins had come up, I observed that many of the latter were cut off by the worms, but could not see a single stalk of corn disturbed, until I examined the rows (for I had marked them) the seed of which had not been prepared. Here I found the worms at work, nearly a tenth part of which they had destroyed; the birds had likewise taken some. The steeped corn was of a greener and more healthy color than the other; grew faster, with stouter stalks, while that from the unprepared seed could readily be pointed out by its more yellow and dwindling appearance; neither was the yield so great as the other.

Now, whether this difference in yield is to be attributed to the copperas, or to the plaster, or to both, I have yet to learn; but think the copperas prevented the birds and worms from committing depredations, as we have frequently rolled seed corn in plaster, but have never found *that*, a security against either birds or worms.

The above is at your service—you will please pardon errors in composition, as my province is behind the plow, and not the pen.

Yours, R. FOSTER.

Lewisberry, York Co. Pa. April, 1840.

THE ROHAN OUT-DONE.

Messrs. Editors—I tried some experiments in 1838, to ascertain the best method of cultivating the potato crop, the quantity of seed required per acre, &c. I also tried to see how many potatoes I could raise from a single tuber. In consequence of this experiment, several of the small boys in our neighborhood, came in as competitors on the ensuing year; one of whom raised from a single tuber, which weighed about six or seven ounces, the enormous amount of four bushels and one-fifth, heaped measure; one of which was much the largest tuber I have seen since I left my native state, New-York, in 1816; many others were very large. The potatoes, when growing, occupied a fraction less than one square rod of ground; making, for this country, a very great yield per acre, notwithstanding a severe and continued drouth all the time they were growing—having been planted on the 9th of June, and being killed by an unusually early frost in September. I saw the potato planted, and the proceeds dug and measured.

H. N. C.

Quaker Bottom, Ohio, Jan. 25, 1840.

HARD-PAN LANDS—INQUIRY.

Messrs. Gaylord & Tucker—I wish to inquire through your agricultural paper, for the best method of cultivating what is usually called (in this section) hard-pan lands. There is considerable such land in the southwest part of this state; and during three or four years last past, many of the occupants have realized but little for their labor. Such land is usually wet and cold. The surface of such land is a black muck, varying in depth from six to fifteen inches. The subsoil is invariably exceeding hard, and it is with great difficulty that the plow can be made to penetrate it at all. Consequently it holds water a long time, and necessarily it is late before the farmer can get in his crop. Should there be any one among your readers, who has experimented sufficiently on such soils to have arrived at a sure conclusion, he would benefit those farmers who occupy such lands, and show himself a friend to agricultural improvement, to make it known.

J. TOWNER.

Gainesville, March 28, 1840.

Breeding Horses for purposes of Utility.

To the Editor of the Franklin Farmer:—I have observed, with much pleasure, some recent articles in your excellent paper, on the subject of "Horses for agricultural purposes;" but those most especially commending themselves to the attention of the farmer, are the prize essays by Messrs. Williams and Beatty, and a more recent one by "Crofts." This subject is more peculiarly appropriate in these *iron times*, when it is necessary to bring every thing to the standard of utility, and when it becomes prudent people to reduce all luxuries to comforts and all comforts to necessaries. With us Americans, however, brought up in such pervading abundance, it is hard to discriminate between such as would be considered luxuries in Europe, and necessaries in this country; the first having become so common here as not unfrequently to be classed with the latter, and probably among them all, there is no item of such unlimited and extravagant indulgence as *horse flesh*. To become aware of the extent to which this last has been carried, we have but to look at the vast sums that have been expended within the last 20 years in the importation of bloods. Estimate the immense number and cost of sporting animals throughout the country, then add the almost incredible number of road and farm horses, that but for the indulgence of their owner's pride and fancy, (luxury,) might much better be annihilated entirely, or their places, when indispensable, supplied with oxen or mules that could perform the necessary labor at half the cost; and, in addition, every young blood must have his crack gelding and every boy his poney, the aggregate of which is an annual expenditure of millions that might be saved, without particular inconvenience. But this taste always has prevailed, and will probably continue so to do to the end of time, and if not *innate*, has been so long indulged in, as to make it a useless undertaking to attempt abolishing it. We must, therefore, content ourselves with the more reasonable and perhaps equally beneficial task of endeavoring to guide the popular will.

Whenever required at all, horses may be rendered valuable to the full amount of their cost, provided there is proper attention paid to breeding exclusively for utility. In the manner of this, however, your prize essays are at total variance; the first giving unqualified preference to the "thorough-bred for work"—the last asserting very broadly, that "experience has shown, both in England and America, that horses of the pure and unmixed blood, though very suitable for racing, are not the best adapted to farming purposes." With this last opinion, I am fully disposed to coincide; for nothing can be plainer, than that the fiery, irrepressible ardor, the quick and sudden, almost *electrical* motion, the indomitable, lion-like spirit and courage of the thorough-bred, constitute an *excess* of the qualities essential to a more servile animal. Occasionally a thorough-bred may be found, uniting all the best horse attributes in such just and well balanced proportions, as to entitle him to stand as a model of the prince of beasts. Such are, however, exceptions that only prove the rule.

The properties required for farming purposes are very comprehensively stated in Judge Beatty's essay:—a "good constitution, gentleness and evenness of temper, docility, steadiness of movement, capacity to endure steady and constant labor, great muscular power, durability, hardiness; easy to be kept in order with moderate feeding;" to which, if we add symmetry of form, fine action and appearance, sufficient spirit and a quick pace when called upon for it—what more is required for the gentleman's horse? Can these properties be united? To a great extent we think they can. And the advantage of adopting this principle would be great; for in breeding such a race, all the progeny would be certain to find a ready and profitable sale, as the choicest in form, spirit and character would command higher prices for the "fancy," while the *mediocre* would answer every purpose for the horse of "all work." But how is this combination to be obtained? Your first essay, (Mr. Williams') says, "import a bay Turk, a bay Barb, a Cleveland Bay and a Bay Dray;" your second, (Judge Beatty's) though recommending a judicious selection of domestic animals as breeders, yet clearly prefers, as conferring "incalculable benefits on the agriculturists of the country, the importation of several pair of the Black Cart-horse, the Suffolk Punch and the Cleveland Bay, to commence a stock with." But the best English authorities say, "the true Suffolk like the Cleveland, is now nearly extinct," and of the heavy black horse, adds, "these are adapted more for show and parade, and to gratify the ambition one has to outvie his neighbor, than for any peculiar utility." While "Crofts," quoting the redoubtable Nimrod, certainly a great authority, says we must go to France for the "light cart-horse and the black roan stallions."

With entire concurrence in the belief as to the ultimate success of judicious experiments in crossing with the foreign breeds, I still think that the object of producing the most *useful and valuable* animal would require more outlay of capital, time, observation and experience, than American breeders have to devote to it; and at any rate, could not be obtained, except through several generations. England was at an incredible expense, and from the time of Athelstane to George I., a period of more than eight centuries, before obtaining a good racer; and Bakewell, in our day, to improve the short-lived sheep, took a whole long life and spent thousands of pounds. What then is to be done? Why the most obvious thing in the world—just lay aside the telescopes and spy glasses that have been used to look across the Atlantic, and put on the old spectacles and examine the stock of the *Northern* members of the family compact, and see if they have any thing indigenous to the soil and climate adapted to the present subject.

Though they have not said, or written, or sported so much on the subject of horses as their countrymen south of Mason and Dixon's line, yet the Yankees, with all their *notions* and indefatigable zeal, have not been altogether idle or unenterprising in this matter. It is vastly to be regretted, however, that they have not adopted some regular, scientific and sustained system of breeding, for the want of which some of their best and most useful bloods ever imported, have become measurably extinct by infusion into the general mass; and though this mass has thereby been greatly improved, yet from the neglect to perpetuate the concentrated essence of this improvement, it must be sought for, if at all, with some modifications.

I cannot speak certainly of any distinctly characterized race as existing there now, although there is no portion of the Union where better roadsters, and the *every-day* farm horse are found in greater proportions. A race existed, a few years since, in Vermont, called the "Morgan Horse," valuable, enduring, active, and every way fitted for hard farm or road service, and of good action and reasonable size and appearance. But it is now unfortunately almost extinct. It was made by a cross of the stout, English thorough-bred, on the hardy Canadian trotting mare; and this produce, a stallion kept by Mr. Morgan, put to the native Vermont mare, gave the "Morgan breed." These horses have been repeatedly tried at the south and west, by mail contractors, as stagers; and it was found that they would go much faster, give a harder pull, and endure twice as long on the road and in service, as the larger horses without known blood, bred there. A memorable instance of this kind took place on the road between Baltimore and Washington, about ten years since. A new line of stages, starting with Vermont horses, in opposition to the old line with the long-backed, leggy, cow-heeled, Pennsylvanian, reduced the time, between the two places, one-half.

New-York, probably, combines a greater excellency of *practical* blood, than any state in the Union. She has had her Duroc, her Membrino, her Messenger and Eclipse, and lastly, her Bellfounder, a pure blooded, imported trotter, of great and deserved celebrity as a stock horse, having been used for the last twelve years on Long-Island and the Hudson river counties. From a combination of these, she annually produces a large stock of serviceable animals, unsurpassed and unsurpassable. Many of them sell, as soon as fitted for market, for $200 to $500 for actual service, while some of the fancy and fast-goers, bring from one to three thousand dollars. Tom Thumb was a New-York horse, a mixture of blood and dung-hill, so far as I could learn; and after beating every thing known in this country, in the trotting line, was shipped to England for a high price, and there won with ease, against the best horses that could be produced. But his best time, when in America, cannot compare with what a crack trotter will now do. To trot a mile within 2m. 35s. to 2m. 45s. is not considered extraordinary in New-York and Philadelphia. Dutchman, in his great match of three miles against time, last season, carrying 145 lbs. weight, did the first mile in 2m. 34s. the second in 2m. 28s., and the third in 2m. 30s., making three miles in 7m. 32s. Now, this is a speed, taking into consideration the difference of weights, almost equal to good racing.

Long-Island weights, for aged geldings, is 123 pounds. Dutchman carried twenty two pounds over this. Seven pounds is considered equal to a distance of 240 yards. Now, allowing for this, and considering that he would average the above speed for four miles, (which it is confidently thought he can do,) the performance would require 9m. 2s. I believe a race of four miles, done in eight minutes, is considered pretty fair time the world over. In the way of trotters and roadsters, the Bellfounders seem to be carrying away the palm just now, uniting as they do, the best English and American racing and trotting blood; and when bred on to good, hardy, common mares, produce, at once, a substantial fine appearing, serviceable animal. I will here give you the description of one that has been standing at Buffalo for the last three years, that you may see how near this style of horse would, on large, heavy mares, meet the ideas of your stock breeders.

Bellfounder 3d was bred by T. T. Kissam, Esq. on Long-Island, New-York, and was got by the imported Bellfounder 2d—he by the celebrated Norfolk trotter, Bellfounder 1st, that went nine miles in less than thirty minutes; and his owner then challenged to trot seventeen and a half miles within an hour, which was not accepted. His grand dam was Velocity, by Hap Hazard, by Sir Peter, out of Miss Henry by English Eclipse—all racers of the first repute. His dam, Lady Alport, was got by Membrino; he by imported Messenger, dam by Tippoo Saib, &c. &c. Velocity trotted twenty-eight miles in one hour and forty-seven minutes. The present Bellfounder was foaled in June, 1830, and when five years old, trotted over the Harlaem course, N. Y. a fraction short of a mile, in 2m. 45s. He was but partially trained, and of such spirit as it was difficult to curb to a trot. A stallion on this gait, is never considered as manageable as if made a gelding. It is, however, under all circumstances, a good speed, and indicates great capabilities for his stock. Bellfounder's color is a dark, dappled bay, a small star in the forehead, one white foot, black legs, mane and tail. He is sixteen hands high, neat head, fine arched neck, short strong back, wide deep chest, long under the belly and powerful, well developed stifle, legs moderate as to length, joints strong, compact and well knit, smooth flat legs, with a pastern sufficiently elastic, but shorter and stronger than that of the racer. His weight, in ordinary flesh, is 1,200 pounds, and it is confidently believed that he possesses all the requisites for service, so well enumerated by Judge Beatty. I would especially commend his docility of temper, being as playful and obedient to a proper groom, even when in season, as a well trained puppy. While standing here, he has been put to mares of *every variety of color*, from white up to jet black, and still every colt, yet dropped, has been of a beautiful blood bay, and very much after the cast of the horse. This is an important consideration, for those who contemplate breeding matches.

Good trotting horses are coming more and more into repute, not only at home, but abroad; and could our great stock producing states be better employed now in these hard times, than in growing well matched, serviceable carriage horses? These animals are in great demand, and ever will be in the Atlantic towns and cities, and good matches, there, always command a high price and sell readily; $400 to $1,000 a pair is not at all uncommon. Russia is at present paying great attention to this department of stock: trotters there, of a first rate repute, bring an immense high price, and are bred, not only for the road, but as an efficient arm of cavalry service. I have repeatedly seen about twenty thousand imperial horse guards, (probably as splendid a military show as the world can make,) under review, and many of their evolutions, I noticed, were on a fast trot; and one of the favorite pastimes of the Emperor Nicholas and the nobility and gentlemen of Russia, the winter I spent at St. Petersburg, was to attend the trotting matches on the frozen surface of the river Neva.

Yours, A. B. ALLEN.

Buffalo, N. Y. Jan. 17, 1840.

VALUE OF ASHES.

MESSRS. GAYLORD & TUCKER—From observation and actual experiment, I have come to the conclusion that leached ashes are worth at least six cents per bushel, to incorporate into a gravelly soil; and that unleached are worth four times as much as leached. Care should be taken to mix unleached ashes well with the soil. This fact shows the impolicy of farmers selling their ashes for 12½ cents per bushel. J. TOWNER.

A farmer ought never to purchase tin pails. A good wooden milk pail will out-last two tin pails of equal cost. J. T.

Gainesville, March 28, 1840.

CONTENTS OF THIS NUMBER.

Predatory Insects—the Wire Worm, White Grub, Plant Louse, Wood Louse, Pea Bug, and Curculio, 69
Agricultural Schools—Agriculture in Massachusetts, 70
Tropical or Southern Florida—Temperature of 1838 and 1839—Honey Locusts for Hedges, Brown Corn, 71
Answers to Inquiries—Culture of Onions—Shrunk Wheat for Seed—Cutting Red Oak Posts—Warbles in Cattle—Grasses for Lawns—Potatoes from the Seed—Apple-trees—Black Scours, &c.—Cultivation of Fruit Trees—Green's Straw Cutter—Poudrette, 72
The Strawberry—Spring Crops—Jerusalem Artichoke—Agricultural Societies—District School Journal—Domestic Economy—Mode of making various Kinds of Pudding and Pudding Sauce, 73
Tompkins Co. Agricultural Society Address—Lightning Rods—On the Use of Lime—Late Sowing of Spring Wheat, 74
Dictionary of Terms used in Agriculture, 75
Bartle's Drill Barrow, and the New Land Coulter, by A. B. M'Clean—Plan of Dwelling House, by J. Cain, 76
Farming in Wisconsin, by E. B. Quiner—Berkshire Pigs, by John Lossing, 77
Culture of the Sugar Beet, by A. B. Allen, 78
Comments on Durant's Report, by R. T.—Ruta Baga injurious to Milk, by J. W. Poinier—Address to Amateur Farmers of Western N. York, by Evelyn, 79
Useful Hints to Prairie Emigrants, by a Subscriber—Culture of Lucerne, by James Byrd—Chinese Tree Corn, by C. N. Bement, 80
Cotswold Sheep, by W. H. Sotham—Timber, by S. W. Jewett—Popular Errors, by M. S. D.—Raising Chickens, by E. H. Vanuxem—Hog Illustrations, by Solon Robinson, 81
Saltpetre in Meat, by J.—Report on Pitt's Thrashing Machine, by Com. of N. Y. State Agricultural Society—Chinese Tree Corn and Mad Itch, by John Reed—Spring Wheat after Potatoes, and Rotation of Crops, by E. W. F.—Mineral Rods, by N. Ives, 82
Geological Reports and Root Crops, by L. B. Armstrong—Whitington Wheat, by G. C. Thorburn—Preparation of Seed Corn, by R. Foster—The Rohan Outdone, by H. N. G.—Hard-Pan Lands, by J. Towner, 83
Breeding Horses for Purposes of Utility, by A. B. Allen—Value of Ashes, by J. T., 84

List of Cuts.

Figures 40–45—Predatory Insects, 69, 70
Fig. 46—Bartle's Drill Barrow, 76
Fig. 47—New Land Coulter, 76
Fig. 48—Parker's Butter Table, 76
Figs. 49–52—Plan of Farm Dwelling-House, 76
Fig. 53—Berkshire Sow, &c., 78

PRINTED AND STEREOTYPED BY
C. VAN BENTHUYSEN.
ALBANY, N. Y.